

Close-up

COCONUT



Winter tomato: an early 2011-2012 season

The world banana market:
a crisis more structural than conjunctural

Litchi from Madagascar: progress!

The European papaya market:
unfulfilled promise

Cherry Tomatoes

They will just love them...
and ask for more !



colors
illness



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Gentlemen of the ACPs who do not believe in the merits of the deregulation of markets, *if you do not ratify and implement the economic partnership agreement (EPAs), your rights will be suspended. This will result in the cancelling of the trade preferences allowed to your countries and hence the return of customs dues levied on your goods exported to the EU. This is what the ACPs received, in not very diplomatic language, as an injunction from the European Parliament and the Council that are drafting a regulation for this. The title is very clear: '... exclusion of certain countries from trade preferences...'. Eighteen countries are concerned and the pariahs include states in all the regions of the world. In West Africa, those concerned include Cameroon, Côte d'Ivoire and Ghana. Full measure of the cynicism involved is seen when the financial impact of the application of such a regulation on the EU budget is examined. It would obviously be positive for Europe at 509 million euros per year from 2014 (382 million after deduction of collection costs). Côte d'Ivoire would have the most to lose at more than 105 million euros. Charity begins at home. In any case, this is what the Europeans are demonstrating by this trade preference blackmail. Europe, a modern tax collector, needs money and takes it from the pockets of the weakest. And we know that tax collectors have unbounded imagination. When are we going to have forced labour, poll tax, ratings, champart, communalism tax, firewood rights, tax on transported goods, mortmain, etc.?*

Denis Loeillet

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Direct from the markets

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Régis Domergue

Website

Unité multimédia (Cirad)

Advertising Manager

Eric Imbert

Subscriptions

Christian Clouet

Subscription rate
EUR 210 / 11 issues per year

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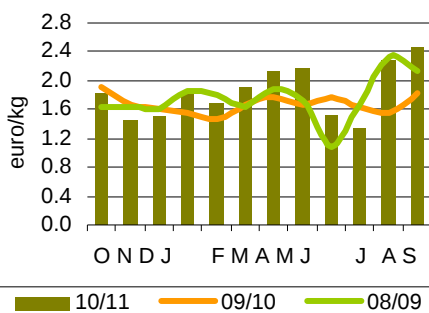
FRUITROP

Avocado

September 2011

The market remained extremely tense, justifying the maintaining of exceptionally high prices. Average volumes of 'Hass' were received in September, with the large quantities from Peru making up for the very early end of the South African season. However, there were no stocks at the beginning of the month and arrivals of green varieties were extremely small. Prices therefore continued to rise, reaching a record level in mid-month. Waning demand caused by dissuasive retail prices resulted in a fall in prices in the second half of the month even though arrivals were very limited. However, the average monthly price is one of the highest observed at this time of year. In particular, prices of green varieties on the northern European markets reached a historic level, running higher than those of 'Hass'.

Avocado - France - Import price



Towards better control of alternate bearing of avocado? The physiology of the avocado tree displays a strong imbalance between strong production of flowers and the small number of fruits that it can bring to maturity because of the poor photosynthetic efficiency of its leaves. In years of large production, the plant devotes a large proportion of its carbon reserves to the growth of fruits at the expense of shoot and the next flowering. Yield can thus double from one season to the next. Professor Carol Lovatt of University of California, Riverside, has developed a trunk injection treatment that limits the phenomenon and increases yields. Before possible marketing, an international consortium has been set up to test this promising technique in the major producer countries.

Source: freshfruitportal.com



© Eric Imbert

fornia, which celebrated the centenary of its avocado industry this year, were also candidates. The event held in Cairns in September drew 850 professionals from all over the world. More than 200 presentations were given on subjects ranging from agricultural techniques to trade. Most of them can be found on the website of the congress:

<http://www.worldavocadocongress2011.com/>

Source: World Avocado Congress

World Avocado Congress: from one side of the Pacific to the other. After Chile in 2007 and Australia this year, Peru will organise the 8th World Avocado Congress in 2015. Colombia and Cali-

New Zealand avocado exporters want to profit from the booming Japanese market.

The two main companies that are active on this market are Avanza, which controls most of the volumes, and Seeka, more known for kiwis. They plan to increase their shipment five-fold in 2011-12. After stagnating at 25 000-30 000 t per year until 2008-09, Japanese avocado imports have increased by 10 000 t in the last two years.

Source: Reefer Trends



© nzavocado.co.nz

PRICE	Varieties	Average monthly price euro/box	Comparison with the last 2 years
	Green	6.00-8.00	+ 30%
	Hass	10.00-10.50	+ 25%

VOLUMES	Varieties	Comparison	
		previous month	last 2 years average
	Green		- 27%
	Hass		- 3%

VOLUMES	Source	Comparison		Observations	Cumulated total / cumulated average for last 2 years
		previous month	average for last 2 years		
	Peru	=	+ 148%	Very large volumes of 'Hass' at the beginning of July, subsequently decreasing until the end of August but remaining distinctly larger than average.	+ 27%
	South Africa		- 36%	Season extended in Europe. Very large arrivals, especially of 'Hass', until the end of the month.	- 35%
	Kenya		- 2%	Limited import flow consisting mainly of 'Hass' until the end of the month.	- 5%

Banana

September 2011

Recovery seems to have been more laborious than in past years. Nevertheless, supply was slightly short, with cumulated shipments from dollar sources only average. The large volumes of fruits from Ecuador were compensated by the small arrivals from Costa Rica, with deliveries from Colombia being normal for the season. Supply from Africa remained stable and moderate and not compensated by volumes from the West Indies that were nonetheless larger than average. But demand was very sluggish. Hotter weather than usual for the season affected banana consumption throughout Europe. Competing fruits were also strongly present at aggressive prices: the table grape seasons in Italy and France were early and collided and the apple crops were very present in certain Eastern European countries. Sales were particularly slow in Eastern Europe where the weakness of the local currencies weighed retail prices. In this context, prices firmed only a little in comparison with those of August, with the monthly average ranging from normal in Germany to 5 to 10% lower than average in Eastern Europe, France and Italy. However, the Spanish and Russian markets started to recover after a difficult summer.

Panama: end of the banana plantations on the Pacific coast? The crisis experienced by the Panama banana industry has resulted in halving of the cultivated area in ten years. The plantations on the Pacific coast have been hardest hit: at the end of 2010, only 700 ha of banana plantations remained in this part of the country, while the national total was still 7 400. Thus producers in this zone have practically disappeared from the list of international market suppliers: their exports were close to 14 million boxes in 2001 but only a million boxes were shipped in the first seven months of 2011. The rise in cost price and the absence of a guaranteed minimum price as applied in neighbouring countries might sink the remaining plantations.

Source: Reefer Trends

Containerisation: the boom continued in Ecuador in 2010. The number of containers shipped by banana operators increased for the fourth year running, reaching a record 68 500 in 2010. The total was less than 19 000 in 2006. The record should be beaten for the fifth time in 2011 as 28 000 containers were exported in the first quarter alone!

Source: Reefer Trends

Start of the banana war in the United Kingdom! As in October every year, the retail prices of bananas started to fall, just like the leaves falling from the trees. Tesco has launched the offensive this year and was obviously followed by ASDA a few days later. Will prices fall to £0.55 per kg as in November 2010? We shall see. But there is no

doubt that this supermarket war seems to be a sacrificial rite for the producers who suffer every year.

Source: Reefer Trends

The average per-hectare yield of banana plantations in Ecuador is still 30% less than in Colombia or Costa Rica. At the second World Banana Congress in Guayaquil (Ecuador), the delegates present learned that the two main problems of the Ecuadorean banana industry are low average productivity in comparison with its main competitors and the lack of a research centre. The banana yield in Ecuador is 1 716 boxes per ha in comparison with 2 500 boxes per ha in Costa Rica and Colombia, and the figure is even higher in Guatemala. If Ecuador were to increase productivity to the level of that of its competitors, its export potential would be well in excess of 340 million boxes per year (6.8 million tonnes). In the first eight months of 2011, the value of Ecuadorean exports totalled some 1.54 billion US dollars!

Source: Reefer Trends

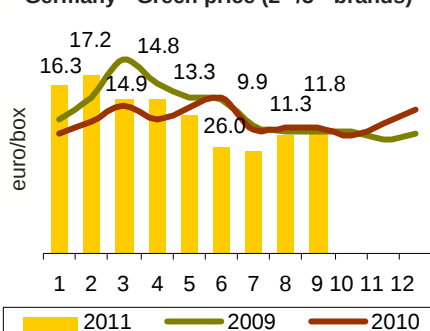


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GERMANY — GREEN PRICE

September 2011 euro/box	Comparison	
	previous month	average for last 2 years
11.80	+ 4%	- 2%

Germany - Green price (2nd/3rd brands)



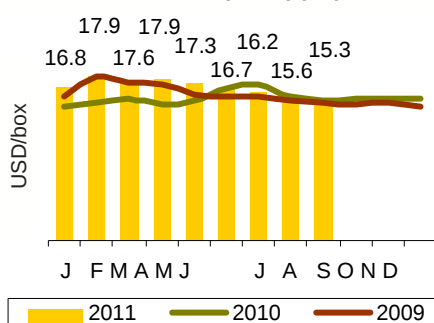
EUROPE — RETAIL PRICE

Country	type	September 2011	Comparison	
		euro/kg	August 2011	average for last 3 years
France	normal	1.46	0%	- 1%
	special offer	1.03	- 21%	- 23%
Germany	normal	1.08	0%	- 3%
	discount	0.96	+ 2%	+ 3%
UK (£/kg)	packed	1.25	+ 2%	+ 7%
	loose	0.70	- 2%	- 17%
Spain	plátano	1.88	- 10%	+ 10%
	banano	1.28	- 2%	- 12%

Banana

UNITED STATES

USA - Green price (spot)

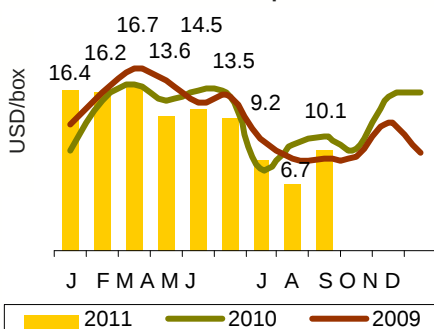


USA — IMPORT PRICE

September 2011	Comparison	
	previous month	average for last 2 years
USD/box		
15.30	- 2%	+ 1%

RUSSIA

Russia - Green price

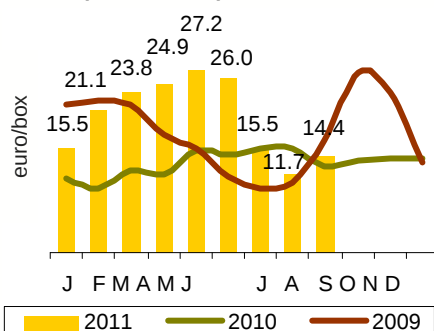


RUSSIA — IMPORT PRICE

September 2011	Comparison	
	previous month	average for last 2 years
USD/box		
10.10	+ 52%	- 4%

CANARIES

Spain - Green price - Platanos*



CANARIES — IMPORT PRICE*

September 2011	Comparison	
	previous month	average for last 2 years
euro/box		
14.40	+ 23%	- 2%

* 18.5 kg box equivalent

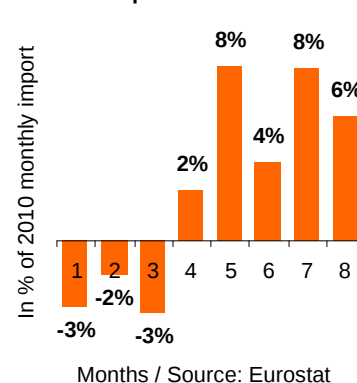
EU banana supply: + 6% in August. European banana imports increased for the fifth month running. After increasing by 8% in July (in comparison with 2010), August ended at + 6% (provisional figure). In five months (April to August), an extra 100 000 tonnes was released on the market. The extra volumes totalled 68 000 tonnes in the first eight months as there was a distinct dip in the first quarter as a result of weather damage in production zones at the end of 2010. Ecuador and Costa Rica are leading the attack with growth rates of 10 and 6% respectively in 2011. The opposite trend is seen in Colombia and Panama (- 2 and - 15%). The ACP group displays a 3% dip with enormous disparities as the Dominican Republic has scored a 10% increase. Cameroon, Ghana and Côte d'Ivoire are having a pretty bad year with decreases of 9, 7 and 3% respectively. Supply from EU production zones is down by 6% overall, with marked dips in the Canaries (- 13%) and Martinique (- 7%). Only Guadeloupe is doing better, with an exceptional increase of some 83% in eight months with more than 37 000 tonnes sold.

There has not been a higher figure than this since 2004.

The United States market has performed well in terms of both volume and value. Net supply increased by 2% (+ 48 000 tonnes). Guatemalan exports to the United States display a record 13% increase, placing this source firmly in the position of leading supplier; it is deserting the EU market. Ecuadorean exports to the US are down by 9%, confirming the country's choice of the European market. Costa Rica, as in the EU, is re-establishing its former position in the US with a 10% increase.

Source: CIRAD

EU-27 - Import - Var. 2011/2010



Months / Source: Eurostat

Banana - January to August 2011 (provisional)

	2009	2010	2011	Variation 2011/2010
000 tonnes				
EU-27 — Total supply	3 364	3 445	3 490	+ 1%
Total import, of which	2 996	3 046	3 114	+ 2%
MFN	2 373	2 363	2 453	+ 4%
ACP Africa	334	359	337	- 6%
ACP others	289	324	324	0%
Total EU, of which	368	399	377	- 6%
Martinique	107	126	117	- 7%
Guadeloupe	31	20	37	+ 83%
Canaries	216	240	208	- 13%
Madeira, Greece, Crete	13	12	14	+ 16%
USA — Imports	2 405	2 763	2 822	+ 2%
Re-exports	369	338	349	+ 3%
Supply	2 036	2 425	2 473	+ 2%

EU sources: CIRAD, EUROSTAT (excl. EU domestic production) / USA source: US customs

EUROPE — IMPORTED VOLUMES — SEPTEMBER 2011

Origin	Comparison		
	August 2011	September 2010	cumulated total 2011 compared to 2010
French West Indies		- 1%	+ 5%
Cameroon/Ghana	=	- 27%	- 15%
Surinam		+ 11%	+ 15%
Canaries		0%	- 13%
Dollar:			
Ecuador		+ 4%	+ 19%
Colombia*		- 5%	- 3%
Costa Rica	=	- 2%	- 8%

* total all destinations

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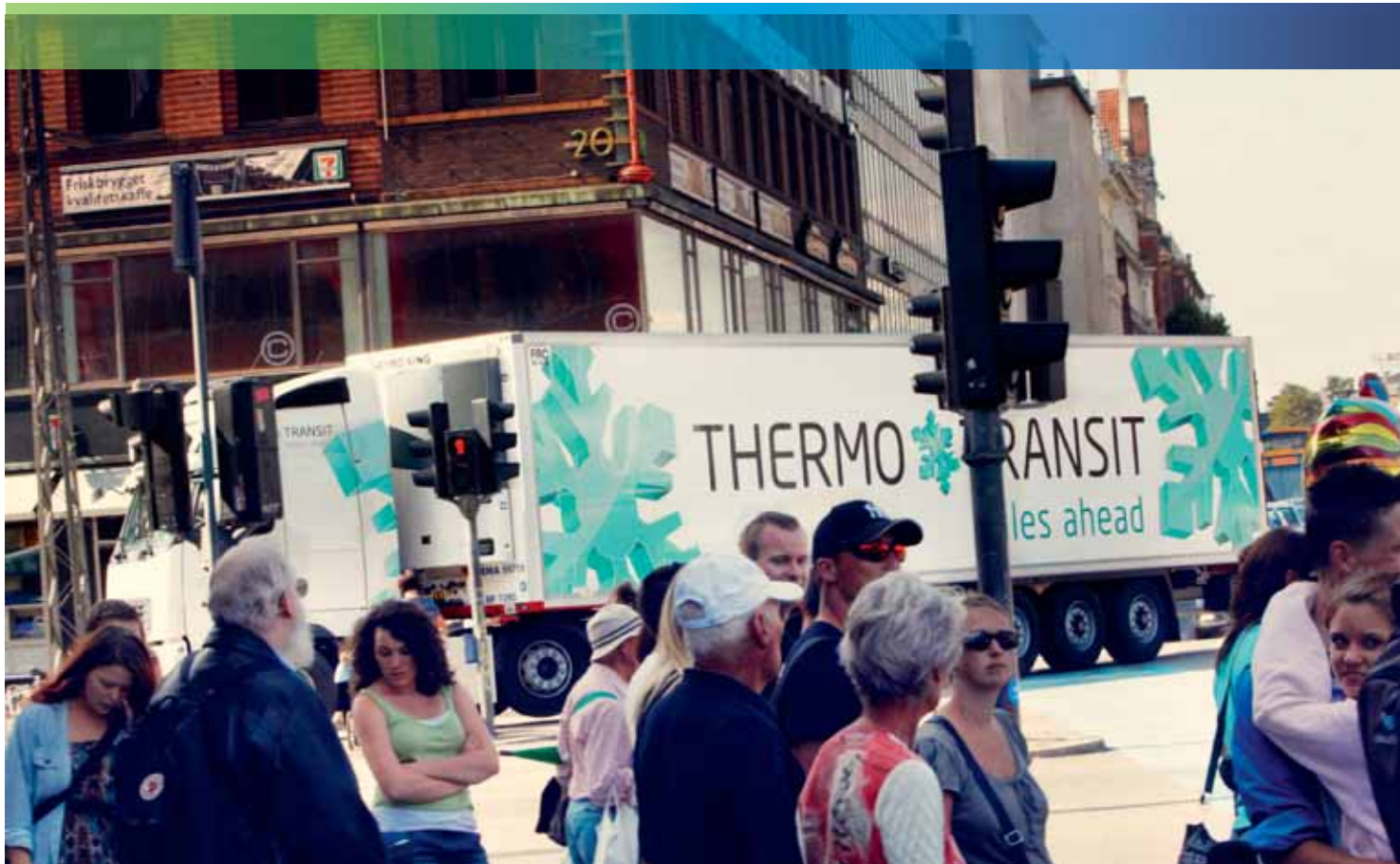


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Orange

September 2011

The market rose for most of the month. First, demand became slightly brisker when schools opened again. Second, the marked supply deficit continued. The Spanish 'Valencia' season finally came to an end and southern hemisphere supplies (South Africa and Argentina) remained short. Prices thus firmed to 10% above average at the end of the month. The market for small fruits was particularly tense.

'Greening' still spreading towards northern Mexico. Infected orange trees have been detected near La Paz in the south of the state of Baja California Sur. The disease is now only a thousand kilometres for the frontier of the United States and the southernmost citrus groves in California.

Source: SAGARPA

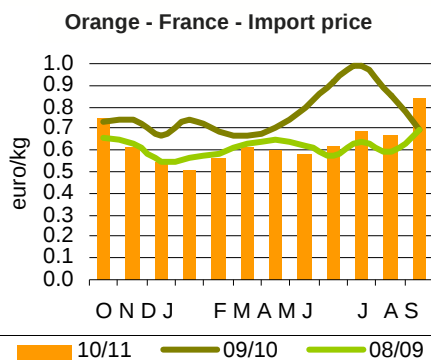
A hymenoptera to help in Brazilian orange groves. Scientists at ESALQ (Sao Paulo, Brazil) are about to perform the first field releases of *Tamarixia radiata*. Laboratory trials have shown that this insect is effective in the biological control of greening. It reduces the population of *Diaphorina citri*, the vector of the disease, by eating the larvae. If the results of field trials are conclusive, *Tamarixia radiata* multiplication centres may be set up. However, the research team running the trials stresses that this control method will only be a supplementary tool in control of the disease and not an eradication method.

Source: FoodNews

million field boxes forecast would be a 2% increase on the last season but 9% lower than the average. An important point to be stressed for grapefruit is that fruit size will increase from distinctly smaller than average in 2010-11 to distinctly higher than the average in 2011-12.

The last census of Florida citrus growing is fairly encouraging for grapefruit. Although area are still decreasing quite fast, the number of trees seems to be practically stable at 5.3-5.4 million since 2010. But orange is still decreasing markedly. Even if the collapse of 2004 to 2008 is over, slightly more than a million trees have been lost each year since 2009, that is to say about 2% of the total.

Source: USDA

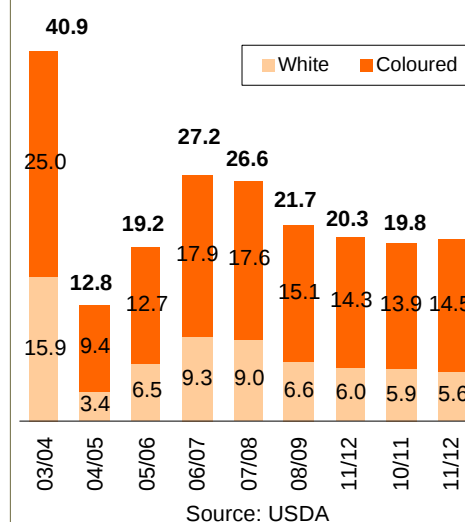


PRICE	Type	Average monthly price euro/box 15 kg	Comparison with average for last 2 years
	Dessert oranges	na	na
	Juice oranges	11.50-12.00	+ 6%

VOLUMES	Type	Comparison	
		previous month	average for last 2 years
	Dessert oranges		- 11%
	Juice oranges		- 11%

VOLUMES	Varieties by source	Comparison		Observations	Cumulated total / cumulated average for last 2 years
		previous month	average for last 2 years		
	Valencia from Argentina		+ 42%	Peak season. Large shipments concentrated on the EU.	- 5%
	Valencia from S. Africa		- 21%	Peak season but volumes limited as a result of production losses and the saturation of the European market at the beginning of the season.	- 23%
	Navel from S. Africa		- 12%	Last limited volumes.	- 11%

Grapefruit - Florida
Evolution of production
(million field boxes - 85 lb)

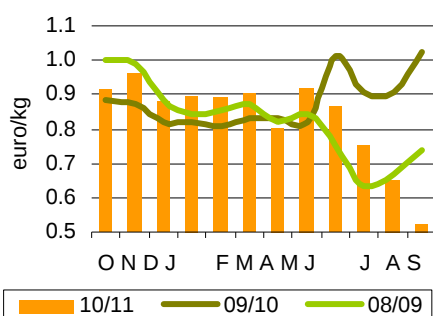


Grapefruit

September 2011

'Catastrophic' is the best word to describe the market in September. Even though arrivals from South Africa were very moderate, practically nothing was shipped from Argentina and the large volumes carried over from August weighed on the market, especially as the quality of some batches was not excellent. Only promotion operations were able to generate a little demand during the slow summer period. The average monthly price reached hitherto unplumbed depths. In this context, arrivals from Mexico found it very difficult to gain a position on the market and the prices had to match the very low prices of fruits from other sources.

Grapefruit - France - Import price



Brazilian orange juice exports: NFC overtakes concentrate! Brazilian single juice exports have overtaken those of concentrated juice for the first time with shipments totalling 382 000 t from January to May in comparison with 362 000 t. This change in the Brazilian industry to the advantages of NFC has taken less than ten years as the first significant exports of NFC did not start until 2002. This change also demonstrates the upward movement in quality of the European market, the main export destination.

Source: FoodNews

Moroccan citrus: record production in 2011-12. The coming harvest should total a record 1.9 million tonnes. Rainfall has been quite ample and weather conditions were favourable during the key physiological stages of flowering and setting. The growth dynamics of citrus planting is now emerging. However, the 570 000 t planned for export is only about 8% more than last season's figure and still slightly less than the volumes shipped in 2006-07 and 2007-08. The still-growing domestic market should take a fair proportion of the production increase, especially oranges, especially as Ramadan at the beginning of the summer should boost domestic sales of 'Maroc Late'. Easy peeler exports should be stable at about 350 000 tonnes. The very small increase expected for clementines (about 220 000 t in comparison with 216 000 t in 2010-11) and 'Nadorcott' (about 40 000 t in comparison with a little more than 38 000 t in 2010-11) should be counter-balanced by a decrease in 'Nour' (73 000 t against 79 000 t) and other varieties of small fruits.

Source: l'Economiste

A compound in grapefruit effective in the treatment of Alzheimer's disease? According to a study conducted by an Indian team and published in a Japanese scientific journal, naringin can have a positive effect in the treatment of Alzheimer's disease. This flavonoid is found above all in grapefruit. The treatment is reported not to address the symptoms but to have an effect on the causes of the disease, with no secondary effects.

Source: Hindustantimes.com



© Eric Imbert

PRICE	Type	Average monthly price euro/box 17 kg box eq.	Comparison with average for last 2 years
	Tropical	8.50- 9.00	- 41%

VOLUMES	Type	Comparison	
		previous month	average for last 2 years
	Tropical		- 29%

VOLUMES	Source	Comparison		Observations	Cumulated total / cumulated average for last 2 years
		previous month	average for last 2 years		
	Argentina		na	Last marginal shipments.	- 53%
	Mexico		na	Arrivals distinctly larger from mid-September onwards and larger than those of the preceding season.	na
	South Africa		- 29%	Last limited arrivals with volumes smaller than average but very large stocks were available at the beginning of the month.	+ 12%

Pineapple

September 2011

September was a particularly difficult month for pineapple sales. Supply of 'Sweet' remained fairly small throughout the month but this did not prevent a fall in prices, caused mainly by lack of interest in this fruit. Demand was very slow throughout the month.

Poor sales followed by the forming of stocks occurred on several occasions. These batches were gradually put back on the market and this often aggravated poor sales as there were both good quality and poorer quality fruits. Supply of 'Sweet' was very unbalanced throughout the month, with large quantities of large fruits for which there was little demand. In spite of an attempt to set up promotion operations, sales remained very small. Buyers sought fruits of sizes 8 and 9, supply of which was small. At the beginning of the second half of the month, the late arrival of ships re-stimulated demand. However, this was very short as demand soon decreased, accentuating the fall in prices. Fine weather and the availability of seasonal fruits until the end of the month weighed on sales of 'Sweet'.

'Smooth Cayenne' was almost completely absent throughout the month. The arrival of 4 or 5 palettes was reported here and there but it was difficult to assess supply on the basis of such small quantities.

The situation was fairly good on the air pineapple market. Relatively limited supplies sold well at fairly firm prices. Fruits from Benin were slightly more sought-after for their quality and colour. Supply of 'Sugarloaf' pineapple sold fairly amply throughout the month at EUR 1.80 to 2.00 per kg.

Supply of 'Victoria' increased slowly but surely and it was possible to gradually place fruits with wholesalers and specialised shops.

Litchis from Madagascar: a responsible sector. The experience of the 2010-2011 season has been beneficial. It will be remembered that the German market was closed to litchis from Madagascar when a large retail distributor found a few batches of fruits whose sulphur content exceeded the maximum residue limits allowed by the European Union. The market was then lastingly disturbed, with disastrous financial results.

Profiting from the inter-season period, the litchi sector has structured itself in such a way as to prevent a reoccurrence of last year's problems. The *Groupe des Exportateurs de Litchis de Madagascar* (GEL) is benefiting in the 2011-2012 season from powers delegated by the Madagascar authorities in order to organise exports with the aim of improving fruit quality and respecting European regulations. Combining the expertise of *Centre Technique Horticole de Tamatave* (CTHT) and with support from Coleacp/PIP, the GEL has applied a series of measures to that formally involve all the operators who wish to export litchis to the European Union.

In order to be certain that the sulphur treatment procedure developed more than 20 years ago by CIRAD (France) is still valid and that no new technique is available today, the GEL has produced a *Guide sectoriel d'autocontrôle* (Sectoral self-monitoring guide) that will enable operators to master the various stages from harvesting to shipping. The guide proposes HACCP type hazard analysis and the actions to be performed to keep risks within the framework of the regulations in force.

The Madagascar litchi sector is

also training the staffs of sulphur treatment and packing stations. This is accompanied by the technical upgrading of treatment installations. The size of the fumigation chambers and the apparatus for the extraction of residual sulphur after treatment are inspected and changed if necessary.

It is obligatory for each of the 25 stations to receive approval from a competent technical committee before the start of the season. If approval is not given, the station in question will be forbidden to operate.

In parallel, the control capacity of CTHT has been strengthened considerably by the purchase of additional laboratory equipment. Capacity for analysis has been doubled.

This plan is combined at the downstream end of the chain with the strengthening of controls on arrival in Europe. Importers are improving their approach radically by speeding up the sulphur analysis process. The results of the analyses will be available a few hours after the unloading of the produce and ready to be handed to distributors.

This broad-based plan assembling the skills of numerous participants should restore the confidence of all the stakeholders in the Madagascar litchi sector: consumers, distributors, importers and exporters.

The sector has been taken in hand. All operators have learned from last year's lesson. This is extremely important as the production aspect of the season is a source of income for tens of thousands of families in Madagascar.

Source: GEL



PINEAPPLE — IMPORT PRICE

EUROPE

Weeks 36 to 39	Min	Max
By air (euro/kg)		
Smooth Cayenne	1.80	1.95
Victoria	3.00	3.80
By sea (euro/box)		
Sweet	6.00	9.00

PINEAPPLE — IMPORT PRICE IN FRANCE — MAIN ORIGINS

Weeks 2011		36	37	38	39
By air (euro/kg)					
Smooth Cayenne	Benin	1.85-1.90	1.80-1.95	1.80-1.95	1.80-1.90
	Cameroon	1.85-1.90	1.80-1.90	1.80-1.90	1.80-1.90
	Ghana	1.80-1.90	1.80-1.90	1.80-1.90	1.80-1.90
Victoria	Réunion	3.30-3.60	3.30-3.80	3.30-3.80	3.30-3.60
	Mauritius	3.00-3.30	3.30-3.50	3.30-3.50	3.00-3.30
By sea (euro/box)					
Sweet	Côte d'Ivoire	6.50-9.00	6.00-9.00	6.00-8.50	6.00-8.50
	Cameroon	6.50-9.00	6.00-9.00	6.00-8.50	6.00-8.50
	Ghana	6.50-9.00	6.00-9.00	6.00-8.50	6.00-8.50
	Costa Rica	6.50-9.00	6.00-8.50	6.00-8.00	6.00-7.00

Mango

September 2011

The shortage of fruits on the European market at the beginning of the month contributed to maintaining high, firm prices for the fruits from Brazil, Israel and Puerto Rico that formed the bulk of supply. From the second week of the month, the fairly high prices caused a decrease in demand, especially from supermarket chains. While supply remained stable, a weakening of the price of sea mangoes affected 'Tommy Atkins' from Brazil in particular. The prices of the other varieties held up better, and the downward trend did not become perceptible until the end of the month.

The Spanish season that had started slowly in the second half of August speeded up with mainly 'Osteen' and batches often consisting of large fruits that were difficult to sell on a market where demand was for medium-sized mangoes. The prices fell throughout the month as deliveries were stepped up. The price ranges broadened because of sizes that were sometimes unsuitable for demand but also according to quality (varying stage of ripeness) and the trade channels used. A few batches of 'Tommy Atkins' and 'Irwin' were also shipped from Spain and were sold at around EUR 7.00 per box and from EUR 5.00 to 5.50 per kg respectively. In the second week of September, Morocco, a new source for the mango market, supplied 'Osteen', thus positioning itself in the same section of the market as Spain. The prices of these fruits soon matched those of Spanish produce.

The air market was supplied mainly by Israel. Prices of 'Kent' were fairly stable in spite of a slight dip in the second half of the month. In contrast, for want of buyers the price of other varieties such as 'Omer' and 'Kasturi' lost considerable ground in the second half of the month. Meanwhile, deliveries of 'Kent' from Brazil got under way and although modest soon made the market heavy. With little colour and only just ripe, these mangoes hit competition from Israeli and Spanish fruits. Supply from Brazil was completed by a few batches of 'Haden', with better colour. Batches of 'Kent' were shipped from Egypt and fetched EUR 3.50 – 4.00 per kg.

Litchi

September 2011

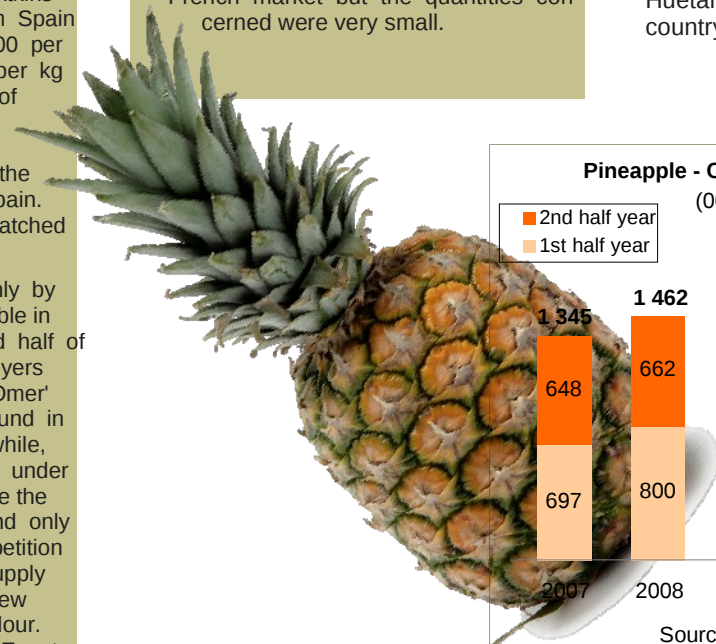
The European litchi market was scantily supplied in September. The season for sales of 'Mauritius' litchi from Israel ended in the first half of the month. The price fell from EUR 3.50 to 3.00 per kg in mid-month, mainly on the Belgian and Dutch markets. The weakening of prices was caused by small demand and also by a worsening of the quality of the last batches to arrive. On the French market, the Israeli season continued until the end of September with the variety 'Yellow Red'. The price of these fruits was steady at EUR 5.00 to 5.50 per kg, falling to EUR 4.50-5.00 at the end of the month. More spherical than 'Mauritius', this variety displayed satisfactory colour overall and good taste qualities. In contrast, they did not keep for long and needed to be sold quickly on a market that was not very interested in this produce or its high price in comparison with competition from other, cheaper fruits. Volumes of 'Yellow Red' exports were limited to a few pallets per week. Several batches of litchis from Spain were also available on the French market but the quantities concerned were very small.

Japan opens the door to Pakistani mangoes. Exporters should be able to start shipping mangoes to Japan in 2012. The fruits must first receive steam heat treatment to ensure that they are free of fruit flies. Japan imports 10 000 to 12 000 tonnes of mango per year, mainly from Mexico and the Philippines, minor suppliers of the EU.

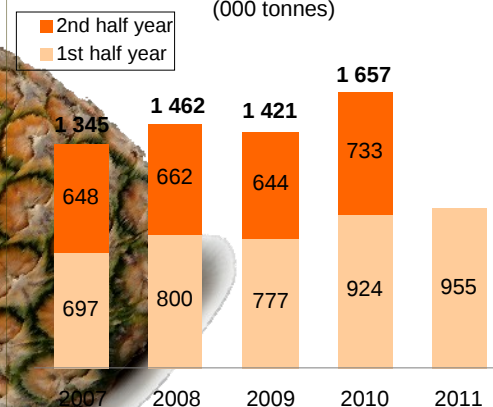
Source: Reefer Trends

Pineapple outweighs banana in Costa Rica. It is reported that the area under pineapple is 46 000 ha against 43 000 ha for banana. Costa Rica controls nearly 70% of the world pineapple trade with more than 1.6 million tonnes in 2010. Nearly 80% of the area is in the Huetar zone in the north of the country.

Sources: Reefer Trends, CIRAD



Pineapple - Costa Rica - Exports
(000 tonnes)



Source: PROCOMER

MANGO — ARRIVALS (ESTIMATES)
Tonnes

Weeks 2011	36	37	38	39
By air				
Israel	20	20	20	20
Brazil	20	10	20	30
By sea				
Brazil	1 600	1 760	1 900	2 110

MANGO — IMPORT PRICE ON THE FRENCH MARKET — Euro

Weeks 2011	36	37	38	39	Sept. 2011 average	Sept. 2010 average
By air (kg)						
Israel Kent	3.50-4.00	3.00-3.80	3.00-3.30	3.00-3.50	3.10-3.70	3.50-4.20
Israel Other varieties	3.00-3.50	2.50-3.00	2.50-3.00	2.50	2.60-3.00	3.50-4.90
Brazil Kent	4.00-4.30	4.00	4.00	4.00	4.00-4.10	3.65-4.15
Brazil Haden	3.80-4.00	3.80-4.00	4.00-4.50	3.70-4.30	3.80-4.20	3.60-4.10
By sea (box)						
Brazil Tommy Atkins	5.50-6.50	5.50	4.00-5.00	3.00-4.00	4.50-5.25	3.60-4.40
Puerto Rico Keitt	5.50	4.50-5.00	4.50-5.00	4.00	4.60-4.90	-
Israel Kent/Keitt	5.50-6.00	5.50-6.00	5.50-6.50	5.00-5.50	5.40-6.00	4.60-6.10
By road (box)						
Spain Osteen	6.00-10.00	7.00-9.00	6.00-9.00	6.00-8.00	6.25-9.00	7.30-9.00
Morocco Osteen	-	9.00-9.50	8.50	8.00	8.50-8.65	-

Sea freight

September 2011

Reefer owners go into negotiations for Period renewals with sand starting to shift under their feet: while the prolonged and historically weak off-season Spot market will have eroded any positive sentiment engendered by a solid February to April peak season, the real damage is being done by the container lines. Not only have Maersk and MSC undermined the historically reefer-dependent Black Sea Spot banana markets they have both started to erode the banana majors' loyalty to the specialised mode.

It emerged during September that Chiquita is to containerise (Maersk) its US west coast supply from Puerto Quetzal, while it has reorganised its transatlantic schedule in order to take advantage of a low-cost MSC service from Costa Rica into Bremerhaven. Elsewhere and after having worked to switch JFC away from reefers into the Black Sea, the Russian multi-national has itself switched allegiance from MSC to Maersk, thereby forcing MSC into tempting Noboa with a similarly cut-price deal for its Med custom.

The pressure is beginning to build: with Dole abandoning its 5 vessel service from Ecuador into the Med, Del Monte redelivering Family Class units to NYK-Cool, and Fyffes on the verge of containerising one of its two transatlantic strings, reefer operators are being battered by a number of headwinds. It is hard to escape the conclusion that unless more vintage tonnage is removed permanently and soon there will be a glut of top-end capacity with nowhere to go but a seriously compromised Spot market at the start of 2012.

It is possible in the short term that the defectors may return if the lines' performance does not match promises – however in the grand scheme of things such an occurrence would make little difference to the long term or probably

even the medium term outlook for the specialised reefer.

It is not just the massive investment in shipping (slot capacity and reefer equipment) being made by the lines that is threatening the mode: it is also the investment in reefer infrastructure at either end of the shipping leg that is carrying the case. One day all of this investment will, of course, have to be paid for – by that time the specialised reefer may be a distant memory and the lines will be able to name their own terms.

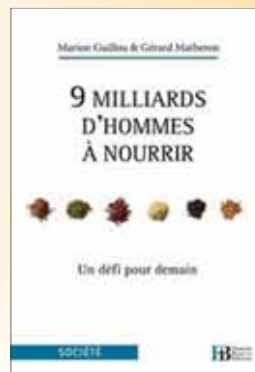
With one or two exceptions charterers and cargo interests are notoriously short-sighted: very few can see beyond the next 2 or 3 seasons, let alone have a 5 or 10 year plan. In contrast the shipping lines work in a different spatio-temporal dimension – over what time frame for example, does Maersk subsidiary APM Terminals plan to amortise its US\$1bn terminal on the Costa Rican coast?

La Niña: shoot again, same player. The US National Oceanic and Atmospheric Administration (NOAA) has announced the return of La Niña for the second year running. Surface water off Ecuador is colder than average. This is a sign of a winter that might be marked again by heavy rain in Colombia, colder and wetter weather in the north-western US, hotter, drier weather from south-west California to Florida, etc. Light rain is expected in the coastal regions of Ecuador. The heaviest rain in Peru will be in the northern region. However, meteorologists indicate that the effects of La Niña are less marked when the phenomenon occurs two years running.

Sources: NOAA, CIIFEN, Reefer Trends

Are we heading for a major world food crisis? After several carefree decades, public opinion is gradually realizing the extent of the challenges we face. Moreover, to feed at least nine million human beings satisfactorily by the year 2050, we will have to produce growing quantities of food that satisfies increasingly stringent quality requirements. We will have to respect the environment more. We will also have to allow for the fact that some of the available land will be needed to produce energy and industrial goods, or to store carbon or protect biodiversity. This will mean innovating, reducing loss and waste, cutting excessive, unbalanced food consumption, and at the same time, freeing the billion or so people who currently go hungry from the poverty trap.

Source: CIRAD



By Marion Guillaou and
Gérard Matheron, Ed. Bourin 2011

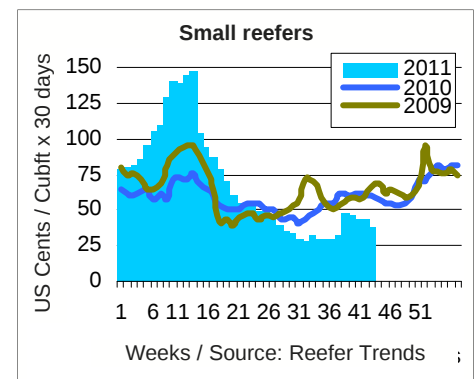
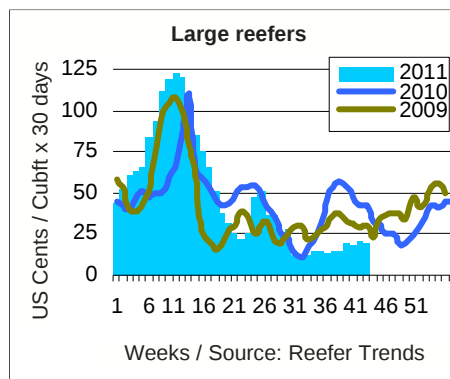
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MONTHLY SPOT AVERAGE

US\$/cubic foot x 30 days	Large reefers	Small reefers
September 2011	19	43
September 2010	47	58
September 2009	29	52



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Winter tomato

An early 2011-2012 season

Morocco is adjusting its positions...

European winter tomato supply is still fairly chaotic overall with each player seeking a position in terms of either calendar or produce category, frequently with a fair measure of uncertainty related to weather conditions. Thus after two years with a sudden start to the season, the 2010-11 Moroccan season started very timidly, an unexpected feature. Several factors contributed to this: the staggering of planting, Ramadan at the end of August, hot summer weather (43 to 47°C) and then particularly difficult progress of supply because of unusually low temperatures in the autumn that slowed the ripening of trusses. The market was thus 'light' until Week 49, making it possible to maintain a very good price level (EUR 0.85 to 1.00 per kg at the import stage), especially as pressure from Spain was particularly weak.

This lateness resulted in a historic peak in supply at the end of the year (12 200 t in Week 50 at Saint Charles wholesale market alone) with the simultaneous ripening of several trusses. Prices fell rapidly (EUR 0.43 per kg at the import stage in Week 52), even falling to below the entry price from 21 December to 4 January.

The market then recovered fairly quickly in January 2011 as supply decreased as fast as it had risen because the weather turned distinctly colder. In addition, export potential for Europe was limited as both the Moroccan domestic market and the Russian market were buoyant.

The market trend was then fairly good until March as Spanish supply was small but then worsened inexorably as quality was very uneven until the end of the season. Volumes then decreased markedly from May onwards.

Finally, even though the season was fairly chaotic and late, Moroccan exports reached a very good level with the second best performance of the decade, reaching more than 364 000 t (provisional cumulated figure reported by the EACCE at the end of June), a 17% increase on 2009-10 but much less than the 2008-09 record of 421 145 t. Exports to the EU are also reported to have increased to 325 000 t; this is 15% more than in 2009-10 and equivalent to the good 2008-09 season, with no change in quotas.

Decidedly, winter tomato seasons are very contrasted. Whereas last year's was very late, the 2011-12 season should be one of the earliest. However, the specialisations of the different sources make it possible for each to find a fairly specific niche, even though some still overlap—especially small fruits. However, imports from third countries marked time last year, stabilising at around 450 000 t, while Spanish production continued to reconquer the European market with 730 000 t, a 7% increase on 2009-10.



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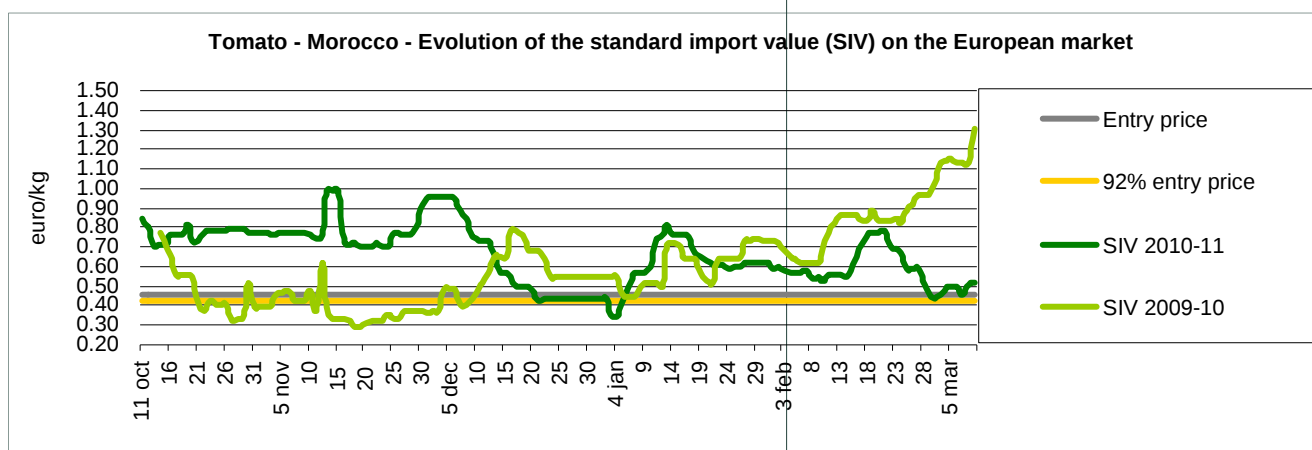
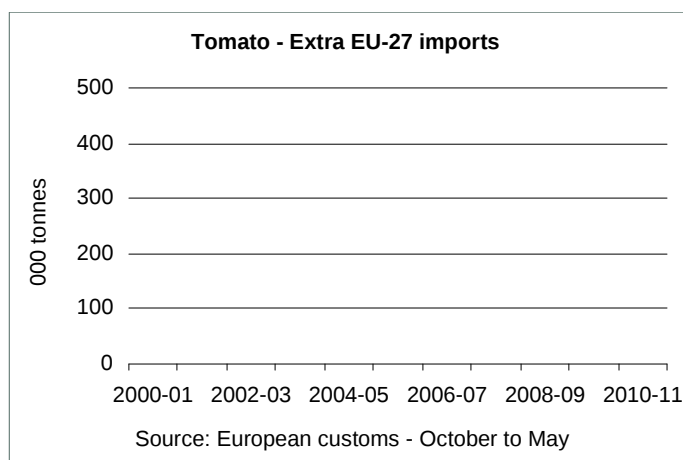


... in spite of a bilateral agreement postponed indefinitely

The bilateral agreement between the European Union and Morocco is still being negotiated. Officially relaunched in September 2010, this agreement planning a gradual increase in the Moroccan zero duty quota (from 233 000 tonnes today to 285 000 t in 2014) was ratified by the Council of Ministers on 13 December 2010. However, the process has since been suspended after a request for further information from the European Parliament which still has to ratify the agreement.

However, more generally, Brussels' approach in trade negotiations with third countries has been strongly criticised by Euro MPs. They asked the European Commission to use a more balanced approach to the community market so as not to leave agricultural interests in second position in comparison with those of industry and services. They also requested stricter control at frontiers and of production methods in countries exporting to the EU, together with a strengthening of the environmental and sanitary standards applied to imported produce and products in order to ensure fairer competition with European producers.

The Agricultural Commission of the European Parliament thus voted by a large majority on 12 July this year not to ratify this agreement between the European Union and the Kingdom of Morocco. At the last session of the International Trade Commission on 22 September in Brussels, José Bové, rapporteur for the Free Trade Agreement between the European Union and Morocco concerning Agricultural Products and Fisheries Products, also requested the application of Article 90 - Paragraph 6 of the Regulation of the Parliament to allow the European Court of Justice to decide on the conformity of this agreement with international treaties. This could suspend the signing of the agreement,





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doubtless for several years, while waiting for a reply from the European Court of Justice.

While Spain plays a close hand

The first part of the 2010-2011 season was fairly light in Spain as a result of a decrease in the area under autumn crops in the Alicante, Mazarrón and Murcia regions, which are also more focused on the domestic market than exports. Shipments did not increase until the beginning of November when production started in the Almeria area and then in the Canary Islands in mid-November. However, the increase in supply was hindered by night temperatures that were too low; this slowed shipments at the end of November/beginning of December but then caused a fairly sudden increase in supply at the beginning of 2011 (2 500 to 3 000 t per week at Saint Charles wholesale market). Under pressure from Moroccan exports, prices fell rapidly at the end of 2010 from EUR 0.85 per kg for round tomatoes at the import stages in Week 50 to EUR 0.45 per kg in Week 52.

After the flood of imports, quantities decreased in February and then increased at the end of the month to more than 3 000 t per week at Saint Charles, with a very varied range: plum, cluster, oxheart, small types, etc. The lateness of Spanish production maintained strong pressure on this source until the end of April, causing a degree of overlapping with other European crops. This resulted in the accumulation of stocks and an unavoidable fall in prices with a fairly marked dip at the end of April, especially for cluster tomatoes (EUR 0.75 per kg at import stage in Week 16 and EUR 0.50 per kg in Week 19). Shipments then decreased strongly in May with the presence of produce from other sources and were then par-

ticularly small in June because of the E. coli sanitary crisis at the end of May (Week 22).

After two years affected by very bad weather conditions, a further decrease in cultivated areas (12 700 ha, that is to say - 3% in comparison with 2009-10 in the main production zones in Murcia, the Almeria area and the Canary Islands) and a fairly late 2010-11 season, Spanish exporters did well in 2010-11 with total exports of 750 000 t (+ 7% in comparison with 2009-10), even if this was well below the quantities attained 4 or 5 years ago (more than 880 000 t).

A very early start to the 2011-12 season

Displaying a pronounced swing, the 2011-12 season should be as early as the preceding one was late, not only because prices were good at the beginning of the season last year and catastrophic in December, but above all because of the staggering of production resulting from Ramadan and favourable weather conditions. Indeed, the weather has had a twin impact on the earliness of the season this year. First, growers planted early, anticipating a very early end to the European season because of the summer weather conditions. Secondly, it enhanced vegetation throughout the summer without any major incidents.

However, although the season is a little early in Spain, it should be even earlier in Morocco as operators had to plant early as Ramadan started at the beginning of August. They thus started in mid-July, with 25% of the area planted by the end of the month, whereas most plantation is generally carried out between 15 and 25 August. The season might therefore start with a bang and production potential that may exceed the duty-free quota allocated to Morocco at the beginning of the season (10 600 t in October and 27 700 t in November).

In addition, even if supply is light in Spain at the very beginning of the season, with a fresh decrease in autumn planted areas, especially in the Alicante region (planted area is stable in Murcia), production could start in the Almeria area in mid-October and in the Canaries in the second half of October.

As regards varieties, round tomatoes should remain dominant in Morocco whereas clusters are still the majority in Almeria. However, diversification should intensify with more cocktail and cherry tomatoes in Morocco and more long and cherry tomatoes in Almeria.

Cécilia Céleyrette, Infofruit
c.celeyrette@infofruit.fr

The world banana market

A crisis more structural than conjunctural

The depression in the banana trade in recent months leads to fears that the market may experience another serious structural crisis. If production capacity remains intact at the end of the hurricane season, supply should be plethoric in 2012. Especially as the aborted emergency plan set up by Ecuador shows how difficult it is to regulate supply. In any case, there is no question of doing this on the supply side: the funeral oration for the common market organisation of banana was given a long time ago.

The world is generally divided between optimists and pessimists. The banana world is divided between the pessimists and the reckless. At the moment, the former are more frequent than the latter. The composition of this group is historically those in favour of a completely open market. Indeed, the WTO, the European Commission, the Ecuadorean government, most European member-states and the United States firmly believe that the banana world will be a better place with a deregulated European market. The group of pessimists—roughly all the sector operators—is in a way suffering from the delusions of the reckless group. Since 2006, the first year of the liberalisation process, climatic and meteorological phenomena have substantially concealed the consequences of the change in regulations on the European market. Some, with a fair dose of hypocrisy, pointed a finger at the depressive effect of the switch from a quota system to a tariff-only system combined with a scheduled decrease in customs dues.

The sinister oracles will prove to be right or wrong in 2011 and doubtless 2012 as well. After finishing 2010 and starting 2011 on a wave of optimism close to exaltation (record import prices in Europe and the United States), the downturn was violent in the second quarter and considerably amplified in the third.

Overall, the reasons for this worsening of the market can be identified as the increase in the quantities traded at the world level and especially in Europe. In fact, 2011 was a demonstration of the classic relation between supply and demand. The basic trend is clear: 5% more volume from April to July 2011 in comparison with the same period in 2010. Month

after month, the increase ranged from 2 to 8%. Finally, 76 000 tonnes more fruits were sold in four months. Another indication of the pressure of supply was found in Ecuador, the world's leading supplier, which has never exported so much: 193 million boxes shipped in the first eight months of 2011. This is 15 to 20 million more than in preceding years.

But the increase in the quantities sold in the EU does hide a few subtle points. Thus the revolutions in the Mediterranean region disturbed the flows of banana, with a proportion of the fruits returning to the EU. The crisis centred on summer fruits did nothing to solve the problem. The poisonous cucumber syndrome also had an impact on demand, further widening the gap between the latter and the vast quantities available. Finally, the more or less diffuse effects of the economic slump also weighed on consumption in general. But you have to be clear. These conjunctural factors just aggravated a clear trend of increased supply of bananas on the world market and particularly in Europe.



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* Etude Institut Ginger en mai 2011 auprès de 1003 individus de 15 ans et plus, échantillon représentatif de la population française.

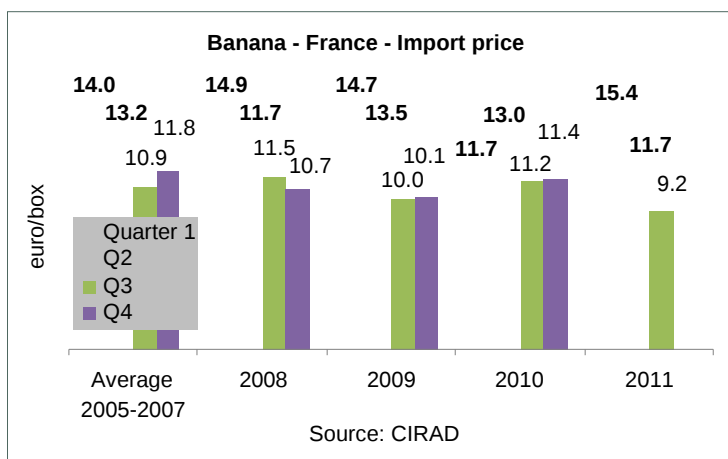
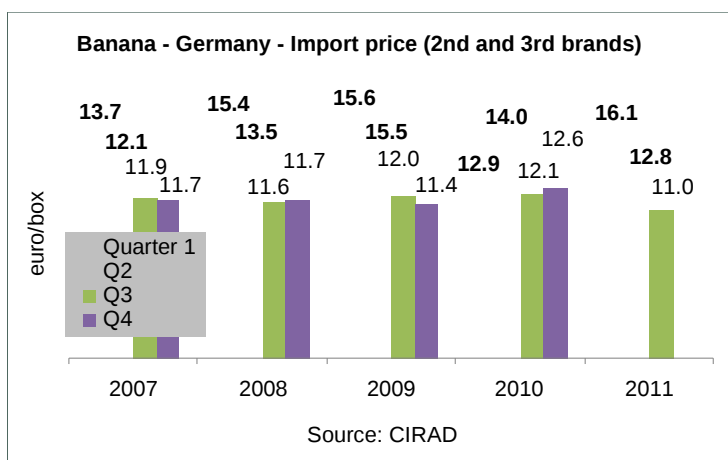
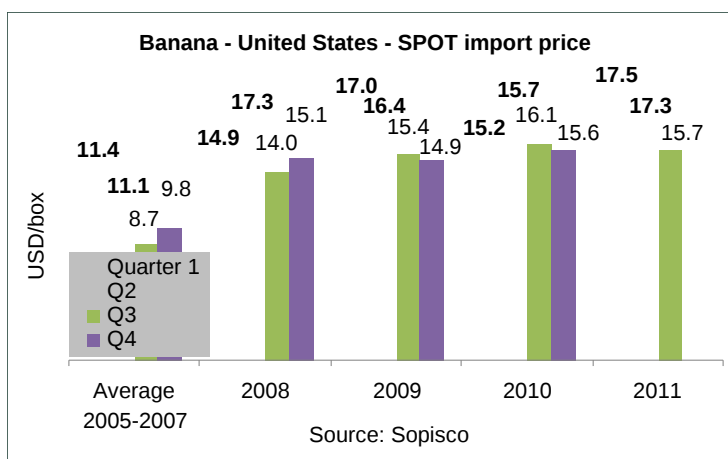
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Thank you Uncle Sam

Salvation, or at least a partial rescuing of the market, came from the United States. The arsonist unwittingly played fire-fighter. Monthly quantities imported into the United States increased steadily throughout 2011. The monthly surplus in comparison with the 2008-2010 three-year average ranged from 3 to 10%. Only the March imports were stable. In the first seven months of the year, an additional 130 000 tonnes was imported into the USA. And in contrast with European import prices, which plummeted during this period, US prices held steady at the worst and increased at best. The very special structure of the US market enabled this performance. This is further proof that market organisation, whether on a volunteer basis, as is the case in the United States, or under the constraint of regulations, as was the case in Europe for nearly 15 years, can maintain a fair price for everybody—including consumers. Indeed, with or without market regulation, retail prices seem to be disconnected from import prices to a considerable degree: they have not displayed any major inflation in the USA and Europe. They are disconnected to such an extent that French retail prices increased markedly this summer whereas supply was plentiful.

The derisory effects of regulation by supply

Once the observation has been made, the central question is that of knowing whether the crisis is more structural than conjunctural. Like any market, and especially agricultural markets, the banana market is punctuated and shaped by crises. Some indications make it possible if not to reach a conclusion at least to guide reflection towards the 'structural crisis' hypothesis. We can examine three examples. First, the triggering of the banana emergency plan in Ecuador. Starting on 18 August 2011, the authorities have set up a support fund for small producers. It totals a little more than 10 million euros and the aim is the weekly withdrawal of 1 million bunches of the 5 million exported and distribute them to small livestock farmers in the Andes or ship them to friendly countries such as Cuba and Venezuela. The system soon turned into a total fiasco. Hardly 100 000 bunches a week were purchased, that is to say less than 2% of 'official' Ecuadorean supply. The rules of eligibility (invoice, listing on registers of producers, tax returns, etc.) soon became too much for the great majority of producers. Furthermore, transport from the production zone to the Andes was neither organised nor funded. In addition, numerous producers complained that they had not been paid in time, further eroding the little confidence that they have in the Ecuadorean government. Finally, the programme took so long to set up that the market did

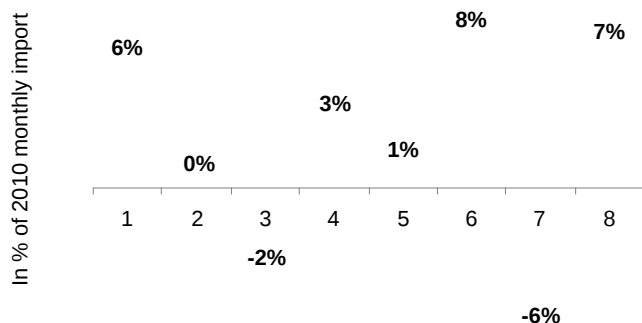


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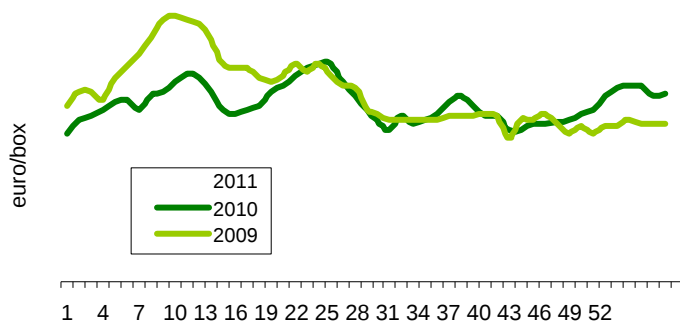


Banana - United States - Monthly import - Variation 2011/2010



Source: US customs

Banana - Germany - Import price (2nd and 3rd brands)



Weeks / Source: CIRAD

its work for it. Producers prices recovered to USD4 per bunch, marking the final end of the emergency plan. There is now talk of financial support for aerial spraying to control Black Sigatoka in small farms.

On another note, it is interesting to dwell a moment on the Ecuadorean government's interventionist policy. It is good, it is good politics and it is often the only solution in agriculture as agricultural prices are extremely volatile. But, in this 'Do what I say, not what I do!' series, the policy is of the same theoretical nature as the inspiration of the CMO banana, whose leading gravedigger was Ecuador. Pity!

Colombia and Costa Rica are the second example. They recently undertook a voluntary reduction of exports for a certain period in order to maintain world prices. This is extremely rare and it happened in 2011! Finally, as regards trading companies, even though Dole's major capital-intensive and organisational manoeuvres in Europe are not related to the current crisis alone, they prove that companies in the sector are suffering and expect to suffer more.

Note should also be taken of the effect of exchange rates that make a large contribution to the competitiveness of certain countries, especially on the European market. Thus the relative fall of the euro against the dollar in recent months has bitten into the returns of Latin American producers.

Mayan prophecy with a taste of banana

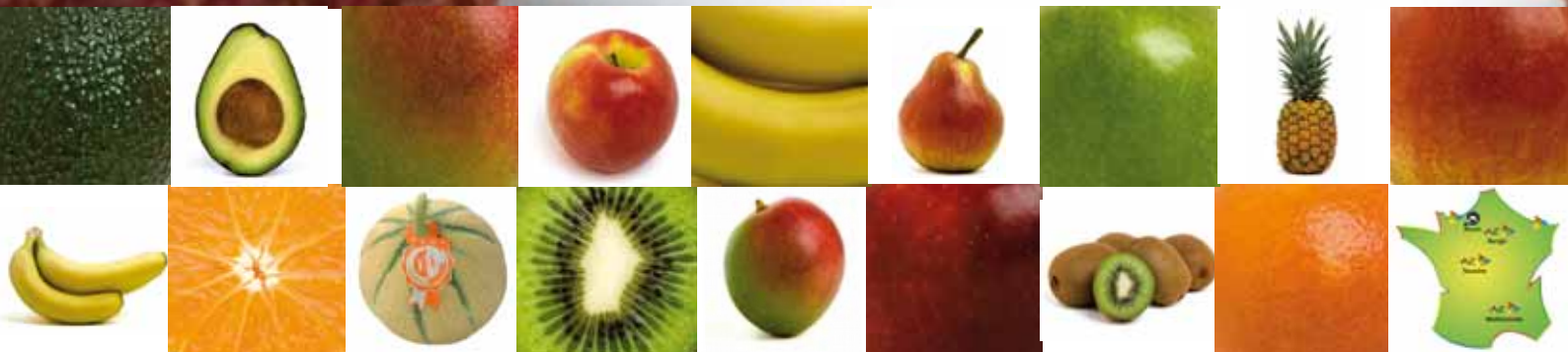
At a risk of being alarmist once again, we can prophesy that 2012 will be particularly dangerous for the banana sector. Indeed, at the time of writing, production capacity is intact and the hurricane season is over. It is true that the rains have been heavy throughout Central America and the Caribbean, but the hurricanes missed the banana production zones. This is obviously magnificent for the local populations but it forms a threat for the world market. In previous years, the world market has had to live with hurricane seasons, gales, El Niño and La Niña and floods. A calmer year as regards weather means that world supply will increase automatically. And the regulation mechanisms for handling this strong increase have disappeared, especially in the EU.

So the Mayas might well have been right. They forecast that the world would end in December 2012. Why wait until then? The first signs could be confirmed in the first few months of 2012! Unless the sky falls on us before then

Denis Loeillet, CIRAD
denis.loeillet@cirad.fr

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Litchi from Madagascar

Progress!

After years of trial and error, the Madagascar litchi sector seems to be taking past experience into account by taking new directions desired and supported by the public authorities. In the coming season, special emphasis will be placed on the quality aspects of fruits and on better matching of volumes to the present European market absorption capacities.

Every year, the approach of the sales season for Madagascar litchi generates feverishness among sector operators. It is true that the sales period is short and the stakes are great. Few sectors cause such a degree of worry. It has to be admitted that exporting and selling 15 000 to 23 000 tonnes of fruits, depending on the year, in two months is such as to cause tension among stakeholders in both the upstream and downstream parts of the sector. Study of flows and of the progress of seasons in the last decade confirm this. The sector does not seem to have a perennial pattern. The close interrelation of numerous factors seems to prevent the deduction of general rules concerning the profiles of seasons. The early or late start of harvesting, the size of the harvest, the distribution of deliveries before or after the Christmas period, fruit quality, the sales calendar, the impact of logistics at loading and at the reception of production, competition between operators, the receptiveness of the retail sector and the dynamism or apathy of consumers are all features that form combinations that make it difficult to gain overall understanding of the evolution of the sector that is continuously in search of a point of balance. Nevertheless, much progress has been made in the last ten years. Conjunctural crises have doubtless speeded up changes and the progress of the sector.

The grouping of operators for the organisation of joint maritime logistics have been an achievement in a sector that previously suffered from fierce competition between several groups of stakeholders and was a source of excesses of fruits unrelated to the absorption capacities of the destination markets.

The requirements of EurepGap and then GlobalGap certification by retailers, passed on

by importers, also meant progress for Madagascar exporters who had to obtain the references required. In addition to conformity with retailers' requests, application enhanced the structuring of export enterprises that had hitherto operated on an artisanal basis.

Study of the progress of seasons brought out little by little a number of other fundamental aspects. The downward trend in the selling price of litchis and the concentration of consumption periods around Christmas and the New Year gradually reduced the scale of the volumes that had been shipped until 2008-09. The volumes exported in 2009-10 better matched the evolution of the European market, with smaller tonnages and a disconnection of the quantitative compensation system between the 'conventional ship' and 'container' periods.

The problems in the last season also indicate a crisis rich in lessons, as it concerns fruit quality



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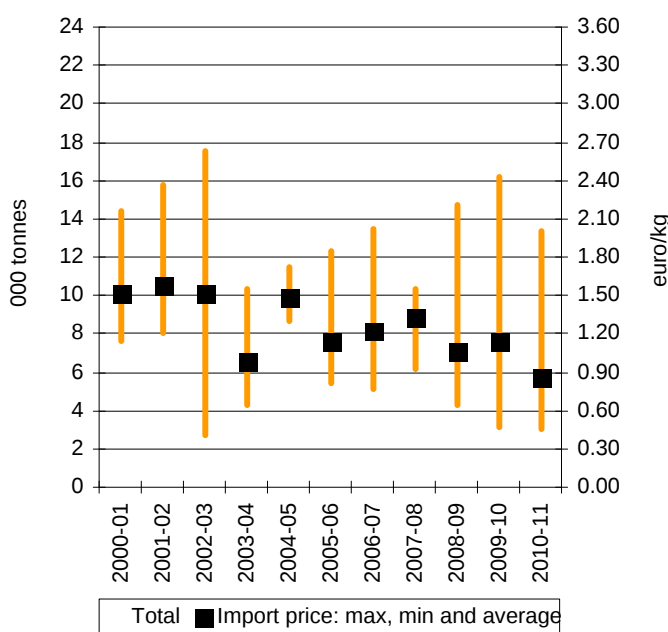
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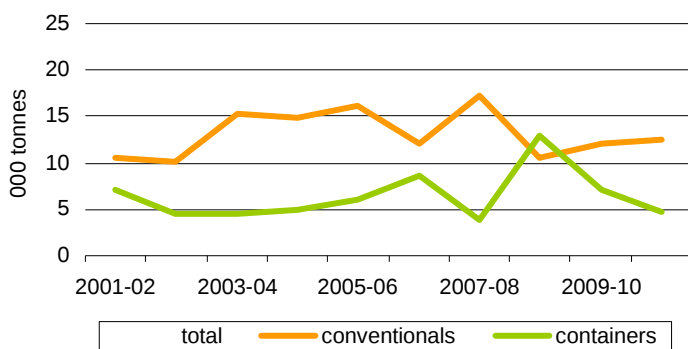


Litchi - Madagascar - Prices (constant euros) and volumes



Source: Pierre Gerbaud

Litchi - Madagascar - Exports to Europe



Source: Pierre Gerbaud

aspects, a field still little explored by shippers. The change in the evolution of the sector is of capital importance today. It can not only achieve better conformity of produce with the standards in force but also regain a section of clientele that had gradually lost interest in the fruit.

2011-12 season: small volumes and better mastery of sales

The coming 2011-12 season thus opens up better prospects. It is forecast to be comparatively late according to phenological monitoring carried out by the *Centre Technique Horticole de Tamatave* (CTHT) and should be identical to last year's. But the weather conditions seem better this year and this could have a positive effect on fruit growth and make it possible to start the season slightly earlier. Madagascan professionals are strongly involved in preparations for the coming season, with concerted support from the authorities in Madagascar. In practice, some 15 000 tonnes of fruits should be exported this year; 13 000 tonnes will be shipped in conventional ships and the rest in containers. Two conventional ships have already been scheduled. If the season starts in Week 47 or 48, these ships could unload in northern European ports in Weeks 51 and 52. Sale of fruits would not be the same as in previous years. Several import companies ceasing to handle litchis and substantial involvement of the Madagascan authorities should result in a reduction in the number of consignees in Europe. These new parameters should make a positive contribution to the progress of the coming season

Pierre Gerbaud, Consultant
pierregerbaud@hotmail.com

The measures decided by the GEL (*Groupeement des exportateurs de litchi de Madagascar*) for the coming season are detailed on page 8 of this issue.



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The European papaya market

Unfulfilled promise

A promising boom in the early 2000s

Spectacular! The word is not a cliché here and clearly describes the beginnings of the papaya market at the beginning of the 2000s. Imports peaked at about 15 000 t at the end of the 1990s and then nearly tripled in five years, exceeding 40 000 t in 2005. Driven by ethnic markets and the virtues of the fruits for health — taking it from the very serious Entrepreneurs de Bichat to the plate of Pope John Paul II — papaya was considered by some professionals to be 'tomorrow's mango'. In short, the fruit was going to leave the narrow world of small exotics and venture into the world of consumer products.

In the early 2000s papaya appeared as one of the most promising fruits in the exotics range. However, after a brief period of glory its venturing out of the 'small exotics' world became a failure. Importers specialised in this range of very special fruits have taken the market in hand and may perhaps be able to give it a new future by emphasising quality.

Development stimulated by a source and a variety

A change in logistics initiated by the main Brazilian producers and exporters led to the democratisation of this fruit in Europe. The solidity of the variety 'Golden' enabled them to use sea transport instead of costly air freight and make the fruit affordable. Papaya could then be sold in supermarkets, especially in the United Kingdom and Germany, where even discount stores referenced it. Sales



© Guy Bréhiner

Packaging and sizing

Papayas for export to Europe are generally packed in 3.5 kg cardboard trays. 'Formosa' papayas are usually packed in 4.5 kg cardboard trays with the fruits protected by an expanded polystyrene sleeve.

Papayas are sized according to the number of fruits per box. Six to 10 fruits are generally packed in a 3.5 kg box. The number varies from 8 to 14 in telescopic boxes. Three to four large 'Formosa' variety fruits are packed in each 4.5 kg box.



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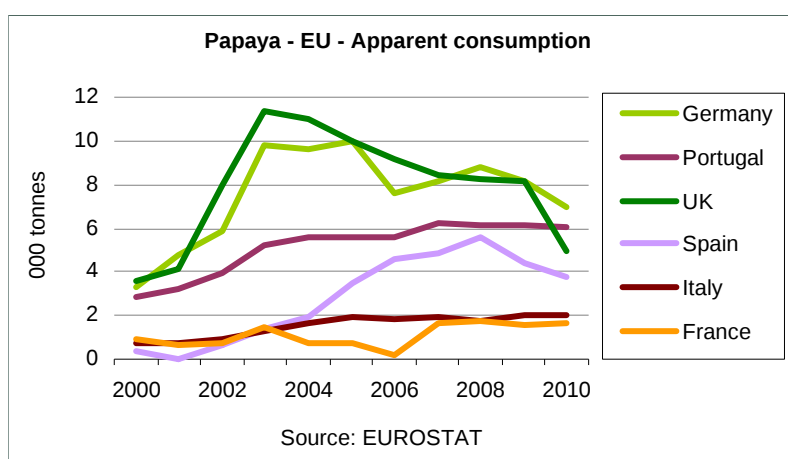
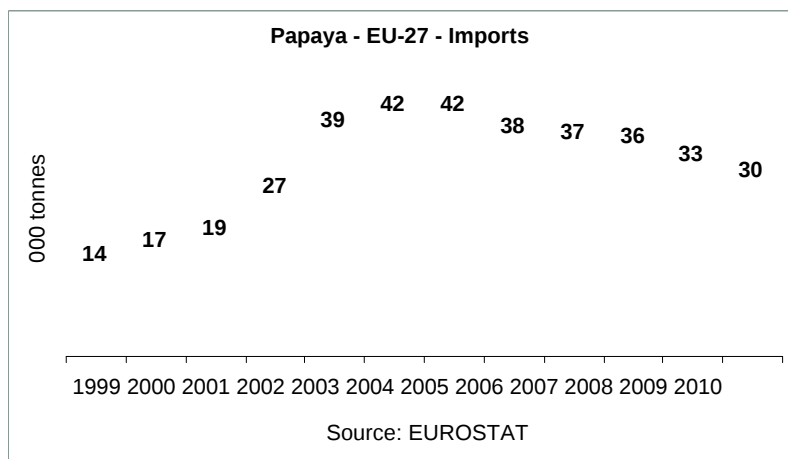


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then increased exponentially in these two countries that soon became the leading markets in the EU, taking nearly half of the volumes imported to the community.

A change in trend in the mid-2000s

But this golden age of 'Golden' shipped by sea was just a flash in the pan. In spite of the use of controlled atmosphere and the efforts made to reduce shipping times from 15-16 to about 12 days, the quality of the produce started to deteriorate. Sorting rejects increased on arrival and the organoleptic quality—difficult to guarantee and essential for a fruit with such a special aromatic profile—also deteriorated (taste quality and peel colour). And the final piece of bad news was the strong increase in sea freight costs and rumblings by Greenpeace about Brazilian papaya and pesticides. This soon had results. Consumption decreased strongly in the UK and Germany, the two major markets, putting a stop to the change of scale of the papaya market in Europe.

Most of the major European markets still in recession

In recent years, the effects of the economic downturn on a fruit with a high retail price added to the problems already mentioned

Papaya — EU-15, then EU-25 and 27 — Imports												
tonnes	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Extra EU	14 021	16 802	18 848	26 724	38 910	41 939	41 856	37 916	36 520	35 972	32 554	29 775
Brazil	10 322	13 505	15 304	20 332	29 111	29 344	31 855	26 942	24 660	23 288	20 527	21 626
Ecuador	2	88	25	14	1 272	4 367	3 387	4 078	4 740	3 661	5 230	5 070
Thailand	230	244	362	645	789	495	671	700	949	1 007	998	889
Ghana	1 790	1 859	1 937	1 414	1 649	1 860	1 334	1 223	1 042	1 061	797	841
Costa Rica	0	23	0	0	4	0	3	20	22	71	78	264
Jamaica	318	259	226	235	181	52	32	30	136	100	149	250
Pakistan	2	0	1	1 301	2 007	1 676	1 152	785	885	669	1 550	154
South Africa	292	67	79	95	41	31	1	21	45	33	81	145
Côte d'Ivoire	382	317	236	340	232	1 164	1 398	1 857	1 806	3 574	1 061	-
India	4	13	23	1 288	2 004	1 722	1 067	519	622	992	857	64
Others	680	426	655	1 060	1 622	1 229	956	1 741	1 614	1 517	1 224	472

Source: EUROSTAT

Post-harvest

Papaya is a climacteric fruit. It is fragile and requires much care during picking and transport. It is sensitive to temperatures lower than 7°C, that cause the formation of small depressed dark green spots that are readily colonised by moulds.

Papayas are picked when green-ripe and can be stored for 3 to 4 weeks at 8 to 12°C. When ripe, they can only be stored for 2 weeks at 8°C. The fruits ripen in two or three days when stored at 12 to 18°C. Shelf-life is 3 to 5 days.

Nutrition

Papaya is low in calories and in sodium but rich in potassium and vitamins C and A.

and amplified the decrease in sales. Analysis of apparent consumption shows that three of the four main EU markets are in recession: Germany, the UK and Spain. Only Portugal is holding out, in particular thanks to its strong ethnic consumption base. Volumes are also stable in France and Italy, but are still limited at about 2 000 t per year. A little more than a quarter of European market sales has thus been lost in the last five years, with imports running at less than 30 000 t again since 2009.

Will the return to a quality policy mean hope?

But although the trade reports that the market is difficult, changes upstream and downstream lead to considering that it might be regaining a better base. The watchword for most operators is now quality once again and not quantity. The market is still very concentrated upstream. Brazil is still the main source country, accounting for two-thirds of supply. However, air freight has become the rule again for 'Golden'. In addition, 'Formosa', a variety reputed for its taste qualities, is tending to form a larger proportion of shipments. These large fruits that attract the catering industry and ethnic markets in particular, are also shipped by air. Ecuador, the only other large supplier of the EU with a market share of some 15 to 20% still ships fruits by sea. But the variety supplied (bred from 'Solo') has satisfactory taste features even if the peel colour is an obstacle for



PAPAYA Nutritional value (pulp/100 g)	
Energy	47 Kcal
Carbohydrate	11.6 g
Vitamin C	60 mg

Papaya — United States — Imports											
tonnes	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Mexico	55 124	68 891	66 965	74 613	94 213	80 182	91 158	92 628	84 901	124 742	115 214
Belize	5 565	5 837	11 021	15 723	24 217	27 716	33 889	33 489	28 170	23 747	28 569
Guatemala	-	148	328	349	415	1 243	1 020	1 540	3 721	2 112	3 882
Brazil	4 672	5 089	5 815	7 178	4 854	4 597	3 662	4 165	3 793	2 923	2 984
Dominican Rep.	2 531	2 877	2 414	2 481	1 201	1 089	987	5 138	2 142	1 791	2 228
Jamaica	1 547	1 579	1 900	1 494	996	1 033	1 319	992	1 096	785	755
Panama	-	-	-	7	-	22	-	99	507	265	205
Costa Rica	324	-	-	-	-	-	-	51	-	-	17
Others	124	20	83	31	114	187	137	6	24	30	39

Source: US customs

Papaya description

Papaya is a semi-lignous tree 5 to 7 metres high, topped by a crown of large leaves similar to those of fig. It grows in the hot, humid tropics. It is short-lived (3 to 5 years) but fruits continuously from the year of planting onwards. It is a sexual plant, making it difficult to produce homogeneous fruits. To overcome the disadvantage, fruit production for international trade is generally performed using self-fertilising hermaphroditic plants. The 'female' fruits are generally more rounded and little sold for export. Papaya fruits grow in bunches attached to the trunk beneath the crown of the tree.

Papaya is an ovoid berry, oblong to globular, measuring from 10 to 30 cm in length according to the variety. The fruit is green, turning yellow as it ripens. The smooth, fragile epidermis is a few millimetres thick. The cross-section reveals orangey to red flesh around a central cavity filled with spherical, non-edible grey or black seeds.



Many varieties exist but those most frequently seen on the European market are 'Solo 8', 'Sunrise' and 'Golden' among the varieties with small fruits (300 to 700 g) and 'Formosa' among those with large fruits (more than 1 kg).

The fruit is generally eaten fresh but can be used in the production of juice, jam, dried fruits, ice cream, etc. Both tree and fruit contain papain, a proteolytic enzyme with digestive properties, also used in pharmacy and certain industries (tanning).



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certain markets. Positive points are also emerging downstream. The papaya trade is tending to become re-concentrated in the hands of exotic fruit professionals. Some of them are developing strategies aimed at fostering quality.

One of the lines of work is ripeness: fruits guaranteed to be well coloured or even 'ready to eat' packaged in trays. The other approach is that of giving a larger role to African 'Solo', reputed for its organoleptic qualities but fragile. However, it became more marginal after the halting of exports from Côte d'Ivoire in 2009. Demonstrating the determination of a retail chain to improve its range, Aldi in Germany is making an isolated initiative to sell papaya again, but the fruits are imported by air this time.

The example of the US market

Without betting on a large-scale recovery of European consumption, it can be considered that these changes are heading the right direction. The development of the US market has been based on quality, with a spectacular doubling of imports in 10 years, with quantities exceeding 150 000 t in 2009 and 2010. It is true that this market has advantages not found in Europe: the presence of a large Hispanic population fringe that is familiar with the fruit and a nearby source country, Mexico, that can guarantee quality similar to that of fruits shipped by air for the price of road transport. However, the main stimulus for increased consumption has been initiatives aimed at making the most of these comparative advantages, such as segmentation by ripeness. This is an example to be thought about!

Eric Imbert, CIRAD
eric.imbert@cirad.fr

Regulations

Papaya is covered by Codex Alimentarius Standard 183/1992 amended in 2001.

A report prepared by
Pierre Gerbaud
in collaboration with
Olivier Audibert
and Roland Bourdeix

Coconut

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the shell is the problem**
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Like passion fruit, coconuts are much better known in processed form than fresh. The processing industry has long focused on this tropical fruit that is rich in flavour and can be used in many ways whereas sales of fresh nuts are smaller in terms of volume. More than other fruits, coconuts are found in extremely varied forms, not only in the food industry but also in sectors such as cosmetics, building and pharmaceuticals. Sales of fresh coconuts are marginal but growing on the European markets. They have a strongly exotic image but are difficult to use, reducing retail sales. A number of innovations to reducing the obstacle of shelling could stimulate consumption in the future.





The world coconut market

The shell is the problem

World production

With production totalling 60.7 million tonnes (FAO) in 2008, coconut is the sixth most cultivated fruit in the world and is grown in more than 90 countries. Production has increased by 19% in the last decade (50.8 million tonnes in 2000). Asia and the Pacific account for 86% of world production, Latin America and the Caribbean 10% and Africa 3%. More than 70% of world production is concentrated in only three countries: Indonesia (32%), the Philippines (25%) and India (18%). Brazil, Sri Lanka, Thailand, Mexico and Vietnam trail far behind. Côte d'Ivoire and the Dominican Republic are only in the 22nd and 28th positions.

Coconut is essentially a smallholder crop and only 6% of world production is from large estates.

Exports

The coconut trade is mainly in processed products and only 0.6% of world production is sold as fresh nuts. With the exception of Indonesia, the main producer countries are not the main exporting countries.

Coconut exports have increased gradually in recent years. They reached 360 000 t in 2008 in comparison with 222 000 t in 2000, a 62% increase. This overall increase may be the result of an increase in per capita consumption, population growth and the globalisation of trade.

Asia, with its 77% contribution to world exports, is the main supplier of coconuts. The main Asian, source countries are Vietnam, Indonesia, Sri Lanka and Thailand, with re-



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Fresh coconut — European Union — Imports										
tonnes	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total, of which	28 947	30 191	31 140	31 911	30 315	31 386	34 295	33 040	32 797	33 864
Côte d'Ivoire	9 260	9 862	10 285	9 126	7 901	8 992	11 231	9 873	10 339	12 157
Sri Lanka	6 773	7 189	5 200	5 195	6 159	9 988	10 556	11 195	8 252	11 611
Indonesia	1 116	946	1 179	466	222	2 826	3 034	2 250	1 986	3 095
Costa Rica	1 177	938	810	1 361	1 361	1 589	1 764	2 260	1 848	1 969
India	62	75	31	12	73	62	156	138	782	1 224
Thailand	529	602	602	742	750	752	968	1 205	1 094	991
Panama	8	-	-	-	-	53	148	-	404	802
Philippines	1 063	1 427	2 368	2 231	1 745	1 636	1 243	771	786	759
Dominican Republic	7 076	7 018	8 574	11 186	10 981	3 495	4 104	4 264	5 995	484
Brazil	62	137	161	536	449	471	218	104	152	192
Ghana	161	3	1	26	11	72	194	72	250	185
Singapore	263	84	220	24	-	140	67	127	159	158
Vietnam	-	21	221	345	98	723	114	374	418	77
Senegal	16	-	44	40	-	-	-	24	119	68
Guatemala	-	-	-	5	1	-	-	-	-	20

Customs code 08011900 / Source: EUROSTAT

Fresh coconut — United States — Imports											
tonnes	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Total, of which	21 708	24 442	24 797	27 445	26 340	26 708	27 310	29 090	29 785	33 522	34 342
Thailand	5 689	7 521	7 231	8 091	9 272	9 307	10 228	11 627	13 498	15 771	15 701
Mexico	4 291	4 830	5 438	6 206	6 069	7 924	8 605	8 964	8 399	11 619	11 797
Dominican Rep.	10 415	11 318	11 700	11 999	10 415	8 934	8 110	7 992	7 257	5 435	5 895
Costa Rica	278	150	20	264	188	153	116	89	-	299	541
Sri Lanka	-	-	9	28	19	23	8	79	173	95	213
Singapore	-	-	-	-	-	-	-	-	-	-	38
Philippines	604	491	224	574	229	176	97	60	21	104	34
Nicaragua	-	-	-	-	-	-	-	-	-	16	28
India	4	13	11	40	74	43	68	123	405	41	25
Côte d'Ivoire	-	-	-	-	-	-	-	-	-	-	23
Jamaica	247	38	81	150	-	-	-	-	-	-	19
Hong Kong	-	-	-	-	-	-	-	-	8	1	16

Customs code 08011900 / Source: USDA, GATS



spectively 34%, 31%, 11.4% and 11.3% of total Asian exports.

Other sources such as the Latin American countries and West Africa supply the world market. With 12% of total exports, the Latin American countries form the second largest supplier of coconut in the world, far behind the Asian countries. The two main sources are Mexico and the Dominican Republic which supply North America and, to a lesser extent, Europe.

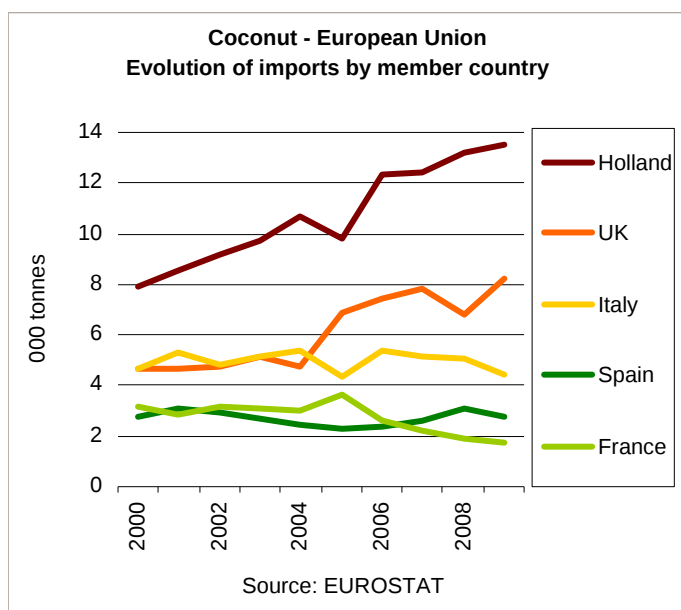
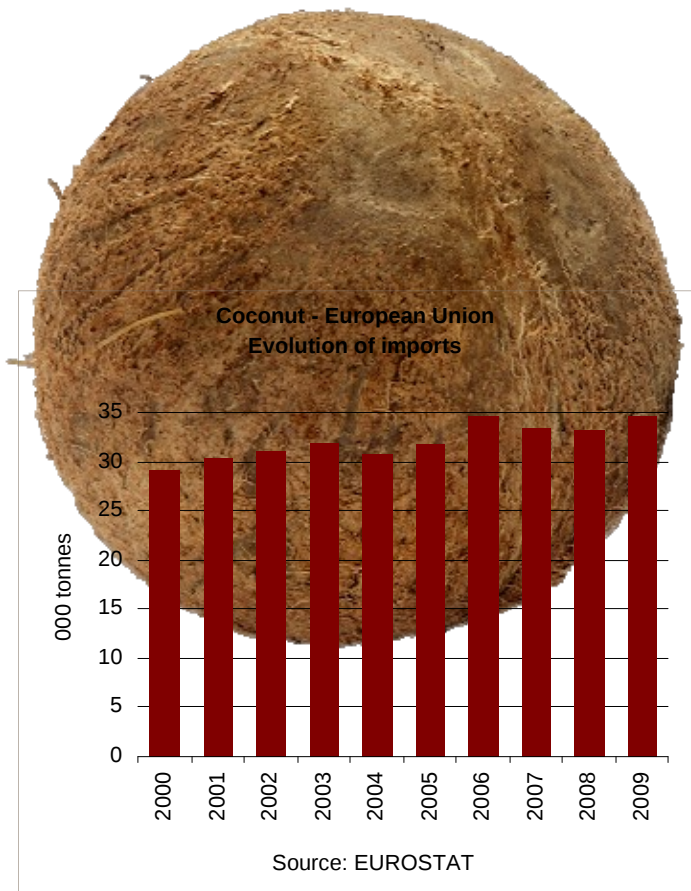
Africa exports half as much as Latin America and ships nuts mainly to Europe. Côte d'Ivoire accounts for practically all exports from Africa (95%).

Imports

Asia, the leading region for coconut exports, is also the main import zone. The Asian market accounts for 66% of all imports, with most of the produce coming from the Asian countries that are largely dominant in world production. Thus China and Japan purchase most of their supply from their neighbours, such as Vietnam. The intensity of trade in Asia is explained by the eating habits (consumption of fresh produce and, above all, processed coconuts) in these countries where most of production is for domestic consumption.

Europe is the second destination for coconuts, importing 34 000 to 35 000 tonnes per year. Imports are fairly stable although they increased by 17% from 2000 to 2009. The main source countries are Côte d'Ivoire (31%), Sri Lanka (26%) and the Dominican Republic (20%), which between them account for 77% of European imports. This is completed by other sources such as Costa Rica, the Philippines and Thailand, that supply 5.3%, 4.7%, 4.5% and 2.6% respectively of the total quantity shipped to Europe.

The volumes shipped to Europe by source country are steady, with the exception of the Dominican Republic with a substantial decrease in shipments from 2000 and 2009 that has been partially compensated by Sri Lanka.



Post-harvest

After picking, the nuts are dehusked by hand with a steel point fixed in the ground. This gives commercial nuts. Distinction is made between mature or dry nuts for eating and fresh immature juice nuts

Even if the pulp is partially dehydrated, coconuts are not subjected to a special drying stage.

Packing and sizes

Coconuts are packed mainly in sacks in synthetic material for 20, 25, 40 or 50 nuts. Sacks of 20 and 25 nuts are less common on markets and are found in sources like Indonesia and Cuba. Most of the nuts shipped from Côte d'Ivoire arrive in sacks of 40 weighting 24 to 26 kg. Average nut weight is 550 to 600 g. Those from other sources may be larger, with weight approaching 700 g, such as those from the Dominican Republic.

The nuts are often repacked after import in boxes of 6 or 8 (30 x 40 cm) or 15 to 16 (40 x 60 cm) for sale to retailers or on wholesale markets.

The main European importing countries are the Netherlands (33%), the United Kingdom (19%), Italy (16%), France (9%) and Spain (8%), making a total of 85% of imports. The Netherlands is the main European importer, re-shipping 60% of its total exports to EU partners. It is supplied directly from source countries (13 500 t) and also indirectly from other community countries (1 800 t).

The United Kingdom and Italy draw their supplies directly from source countries and import little from other EU countries. Spanish imports are mainly from source countries, and an average of 50% of the total is exported to other European countries. France imports as much from source countries as from other European countries such as the Netherlands.

Intra-community trade has thus developed in the last ten years, with better distribution of produce. Import flows in



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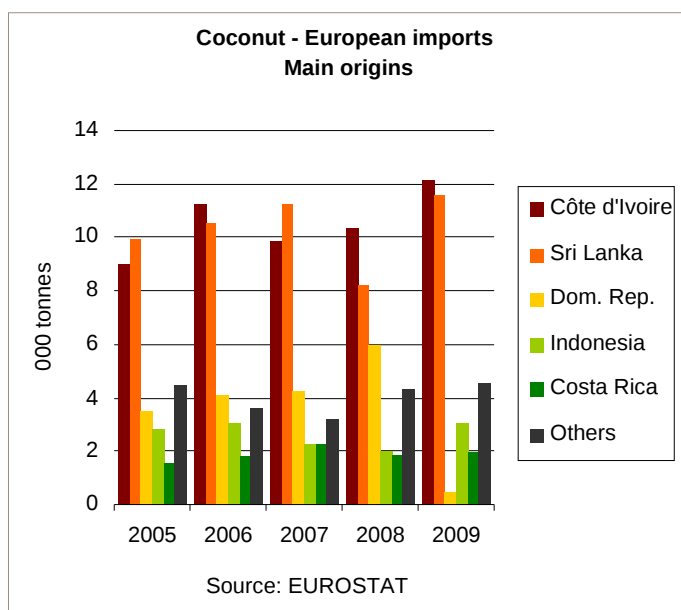
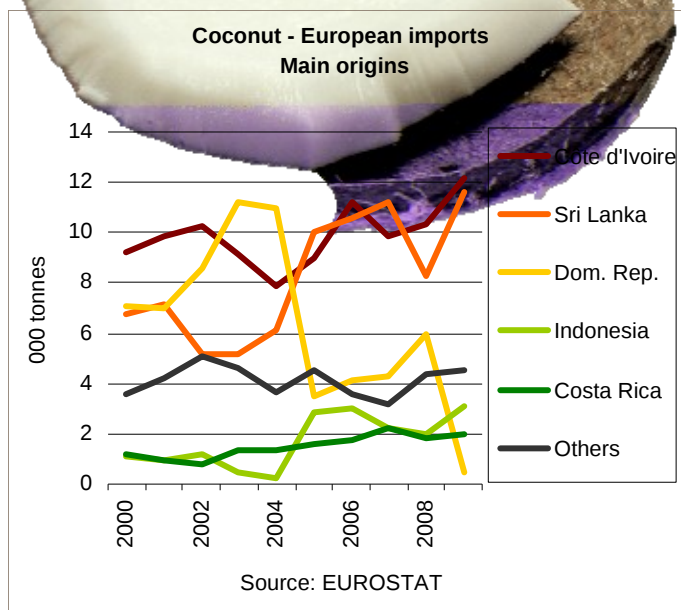
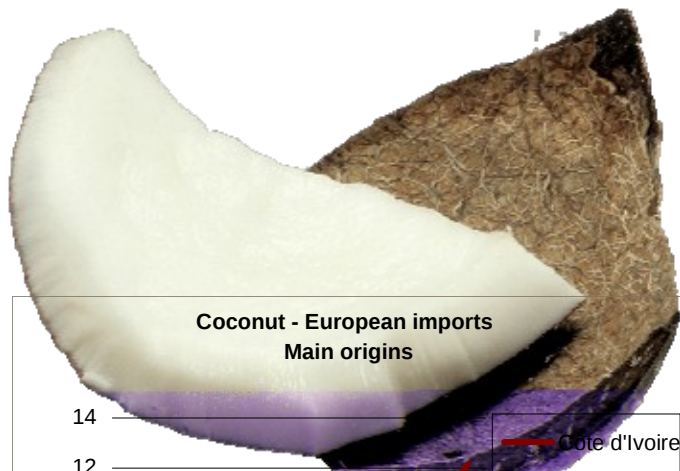
...and all exotic
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the various EU countries still seem to be determined by the heritage from the past. Most of UK coconut imports are from Sri Lanka while those on the French market are shipped from Côte d'Ivoire.

North American imports are slightly smaller than those of the European Union. Contrasting with geographic logic, Thailand is the leading supplier, followed by Mexico and the Dominican Republic.

Prices

Coconut prices are stable in Europe. The average is EUR 14 to 15 for a sack of 50 nuts, EUR 11 to 12 for a sack of 40 nuts, EUR 8 to 9 for a box of 15 to 16 and EUR 5 to 6 for a box of 8. However, prices depend on the source of the nuts, with those from the Dominican Republic, Costa Rica and Sri Lanka often being more expensive (about EUR 19 per sack of 40) than those from Côte d'Ivoire (about EUR 11.50 for the same quantity). This variation in price result from production and transport costs and also the average size of the nuts. Coconuts from Côte d'Ivoire are generally smaller and fetch a lower price than those from competing sources. The prices of boxed (hence repacked) coconuts at the import stage varies from EUR 0.40 to 0.80 per nut according to quality, sources and possibly the time of year.

Temporary changes in price may result from exceptional events. The tsunami that hit Sri Lanka in December 2004 caused serious damage to plantations, making exports impossible for a long time. Sri Lanka is an important source of supply and the quantity shortfall on consumer markets soon resulted in higher prices.

Likewise, the political disturbances in Côte d'Ivoire from February to April 2011 resulted in the suspending of exports to foreign markets and hence higher prices on the European markets. Especially on the French market, scarce supply from Côte d'Ivoire resulted in a rise in prices from EUR 0.40-0.60 per nut to EUR 0.80 until June, when the shortage was gradually made up.

The quality of imported coconuts

In spite of their apparent toughness, coconuts, like other fruits, may have quality defects that can affect sales conditions. It is difficult to assess the quality and freshness of a coconut. It is considered that coconuts keep for about two to three months but this period depends on storage conditions. Coconuts are generally shipped at 8 to 12°C. Storage temperature at the import stage is about 10°C. In contrast, downstream the produce is often stored at ambient temperature and this is not favourable for the conservation of the quality of the fruit. It is also difficult to find out the time elapsed between the harvesting of the nuts and shipping from the source country. Some importers ask shippers to perform tests at the source by opening a representative number per batch. On reception, quality verification can be performed by checking that they contain milk and that the eyes are not germinating.

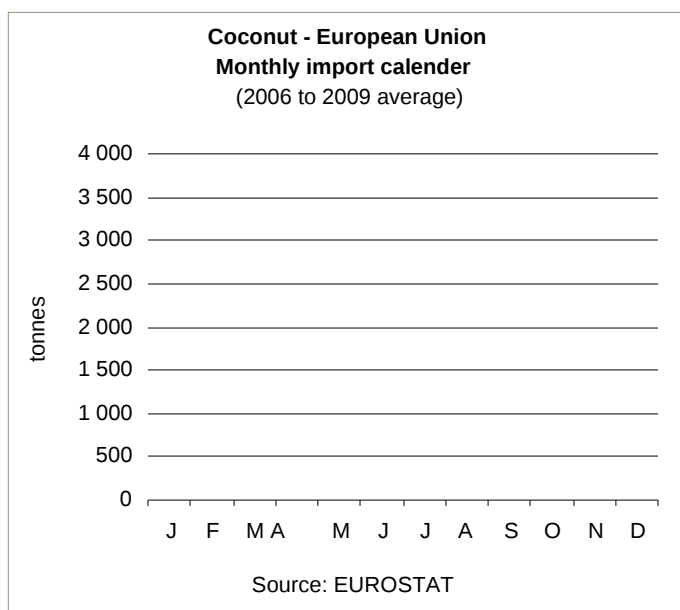
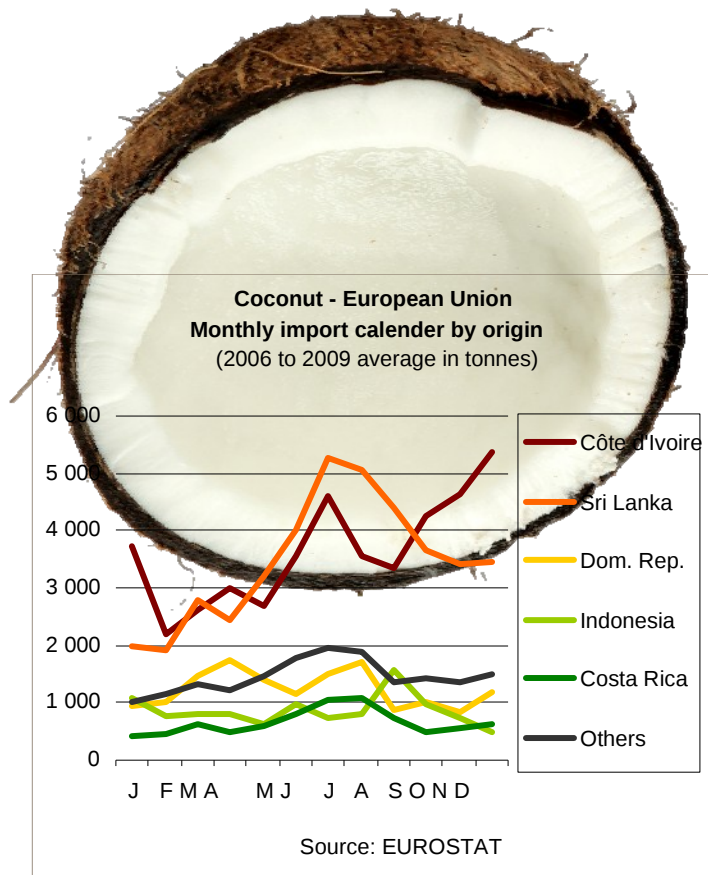
The main defects observed in coconuts are:

- broken nuts because of poor sack handling;
- nuts wetted by the juice of other fruits, enhancing the growth of moulds;
- germination of eyes.

Shell strength varies according to variety. For example, the shell of 'West African' tall is thicker than that of the hybrid cultivar 'PB 121'. The latter are more fragile, with a higher risk of broken nuts in the batches sold.

Consumption in Europe

Coconut consumption is fairly small in Europe and has hardly changed in recent years. Certain professionals consider that consumption per household is 1 coconut every 4 years. It is a complement to the range of exotic fruits and often not out forward by retailers. How-



Nutrition

Coconuts have a high fibre content and are a good source of minerals and trace elements: magnesium, iron, manganese, copper, etc.). It is a fresh fruit but the pulp contains only 45% water in contrast with other fresh fruits.

Coconut Nutritional value (100 g)	
Protein (g)	3.4
Carbohydrate (g)	5.9
Lipids (g)	35.1
Fibre (g)	9.5
KCal	353

Regulations

There is no specific standard for fresh coconut. However, several international standards apply to processed coconut:

- Codex Alimentarius standard for dried grated coconut (Standard 177, 1991 revised in 2011);
- Codex Alimentarius standard for coconut-based aqueous products (Standard 240, 2003);
- Code of Hygienic Practice for Desiccated Coconut.

ever, it has a strongly exotic image not only because of the palm and the distant source but also because of the special, much-appreciated taste of the flesh. It is also well-known by the public via a broad range of processed products (biscuits, beverages, ice cream, exotic cuisine, etc.). The main feature that slows consumption is obviously its inconvenience. Its hard shell and consumers' lack of knowledge of how to open it give it a secondary role in the range of exotic fruits that does not match its image. Innovative attempts at making opening easier (several pre-cutting procedures) have been tried from time to time but there has never been a truly practical and economically satisfactory system.

The association with coconut-based processed products (beverages, dried fruits, etc.) has been a line of research in marketing for the promotion of consumption. The results do not seem to have come up to the expectations of those involved. The only pathways that currently seem positive for increasing consumption are ethnic markets consisting of people who know more about how to use coconuts and the fresh-cut produce sector. The presentation of trays of coconut segments in supermarkets can encourage the European public to consider the fruit with more enthusiasm. This is in fact just a transposition of older practices when sellers were to be found in the street and fairgrounds.

Consumption is fairly steady throughout the year although it speeds up at times in the summer and, like all exotic fruits, during the Christmas period. In addition to its exotic image, a significant asset is its price. It is inexpensive and much cheaper than other tropical produce. Its form, colour and originality also make it stand out, with liquid to drink and pulp to eat in the same fruit.

Innovations in coconut

Innovations to promote coconut sales in Europe are few and far between and the few attempts have rarely been truly successful. Developing the pre-cutting of



Coconut — World production (tonnes)	
World	61 600 000
Indonesia	20 532 850
Philippines	15 493 550
India	10 521 000
Brazil	2 366 205
Sri Lanka	2 154 900
Thailand	1 432 455
Mexico	1 125 555
Vietnam	1 111 800
Papoua	920 000
Tanzania	572 799
Myanmar	462 704
Malaysia	457 524
Solomon Isl.	408 000
Ghana	316 400
Vanuatu	308 500
China	304 100
Mozambique	267 500
Nigeria	235 350
Côte d'Ivoire	216 659
Jamaica	182 134
Samoa	161 334
Venezuela	157 055
Fiji	150 000
Kiribati	136 666
French Polynesia	101 032

Source: FAO - 2008-09 average

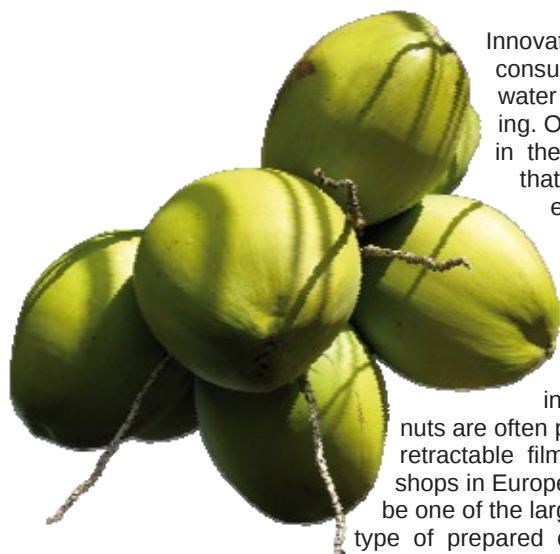
Fresh coconut World exports (tonnes)	
World	362 300
Vietnam	107 373
Indonesia	92 230
Sri Lanka	39 906
Thailand	30 832
Dom. Rep.	18 709
Côte d'Ivoire	20 596
India	21 005
Mexico	9 289
Malaysia	4 863
Guatemala	2 635
Venezuela	1 516
Philippines	1 909
United States	1 732
Singapore	2 087
Samoa	963
Tonga	901
Guyana	711
France	400
Tanzania	467
Cambodia	342
St Vincent, Grenadines	359
Dominica	352
Panama	173
China	322
Kenya	185

Source: FAO - 2008-09 average

Dry coconut World exports (tonnes)	
World	275 000
Philippines	129 533
Indonesia	51 069
Sri Lanka	39 356
Singapore	25 658
Malaysia	7 995
Mexico	5 516
Costa Rica	3 014
India	2 112
Venezuela	1 690
France	1 517
Dom. Rep.	1 072
Kenya	1 024
Panama	1 017
Thailand	984
Madagascar	751
Uganda	673
United States	585
Brazil	413
Cuba	250
Sao Tome, Principe	205
South Africa	143
Peru	130
China	95
Senegal	91
Australia	89

Source: FAO - 2008-09 average

the shell is technically difficult and not very profitable, given the retail price. Another technique developed was the insertion of a wire to break open the nut but the result was not convincing.



Innovations focused on the consumption of coconut water seem more promising. One consists of a hole in the shell with a closure that the consumer can easily remove to insert a straw. Another is immature nuts with the husk cut in the shape of a roof. It is easy to pierce the shell to insert a straw. These nuts are often packaged in thermo-retractable film and sold in Asian shops in Europe. Thailand seems to be one of the largest suppliers of this type of prepared coconuts. 'Aromatic' coconut varieties have also been developed there.

The coconut-based beverage sector is also a substantial market and has developed strongly in recent years. In Brazil, for example, annual sales are some 300 million dollars. Coconut water in Tetra Pak packaging is a great success in the USA and in English-speaking European countries. Recommended by the FAO, the drink is made from green coconuts and has virtues for health (low carbohydrate, low fats, rich in minerals, etc..) and in particular for rehydrating the body. The name 'Fluid of Life' is used. And coconut is used of course in the composition of numerous beverages with other ingredients. Removing the difficulties involved in consumption, the sector is growing markedly faster than sales of nuts.

Pieces of coconut flesh in trays seems to be the main innovation for this traditionally imported fruit. Processed in Europe, it is sold in the fresh produce department and keeps for about three weeks

Pierre Gerbaud, Consultant
pierregerbaud@hotmail.com



Coconut cultivation

Cocos nucifera L.
(Arecaeae)



Historical background

The coconut palm is a tropical plant that originated in Melanesia. The last traces of coconut fossils found in India and New Zealand date back several million years. Coconut spread around the world in several waves. The first occurred thanks to the fact that the fruits float and can therefore cross the sea to populate neighbouring islands. In the Middle Ages, the Arabs set up a substantial trade in the Indian Ocean and enhanced the dissemination of coconuts. In the sixteenth century, European colonists contributed to its spread from the Indian region to West Africa and the west coast of America.

The fruit was just called 'coco' until the seventeenth century, but the word 'coconut' subsequently prevailed. The word 'coco' comes from a Portuguese term that meant monkey face, referring to the appearance of the nut.

Botany

The coconut palm, *Cocos nucifera*, is a member of the Araceae or Palmaceae family. Like all members of this family, the coconut has palms (pinnate leaves). The species name *nucifera* is from the Latin *nux* (nut) and *fero* (to bear): nut-bearing. In spite of their appearance, coconut palms are not trees in the botanical sense of the term but giant herbs that can grow to a height of 30 metres. Reference is not made to the 'trunk' but the 'stipe', formed by the healing of points of section of palms shed in preceding years. The stipe has a single terminal bud that continuously shoots palms up to 7 metres long. They are arranged in a spiral, forming the crown of the



palm tree. The number of bunches of nuts can be determined by counting the leaves as there is an inflorescence in the axil of each palm. The latter consists of about forty spikelets each bearing male and female flowers. The mode of reproduction varies according to the species.

The coconut palm fruits all the year round and the fruits reach maturity after 11 to 12 months. Each palm produces 50 to 150 nuts each year. Coconut palms are herbaceous and can bear fruit for more than 100 years but the maximum is generally reached after 10 to 20 years.

The fruit is an ovoid or ellipsoid drupe weighing 1.5 kg on average. It contains a single seed, the coconut, that forms some 60% of total fruit weight. Coconuts sold by retailers display fibres that are the remains of a thick husk that has been removed (dehusking). A second, very thin envelope covers the husk, forming a smooth green, orange, yellow or ivory skin.

Young nuts contain much coconut water and a thin, white gelatinous coating on the inner surface of the nut. As the nut ripens, the coating becomes thicker and solidified, giving a very white pulp (the 'meat'). Various extraction techniques are used to obtain different oily by-products: copra, milk, cream and oil.

Ecology of the coconut palm

The coconut palm is a very familiar plant in humid tropical regions. It adapts fairly well to climatic conditions and is so appreciated in certain countries that it is found beyond its ecological niches. Cultivation of coconuts requires substantial light and the optimal temperature for growth of the palms is 27°C, with extremes of 13°C and 35°C. Although most coconut palms are planted at an altitude of less than 500 metres, they can nonetheless do well above 1000 metres although low temperatures compromise growth and yields. Coconut palms generally grow in regions where precipitation is distributed evenly throughout the year and totals some 1 500 to 2 500 mm and where relative humidity is high. This is why they are found in particular in coastal zones that are temperate and where sea winds bring high humidity.

The coconut palm has leathery semi-xerophile leaves and can withstand drought periods lasting for several months. However, insufficient water may cause the

abortion of flowers, premature fruit fall and a decrease in the size of the nuts.

The coconut palm is very adaptable as regards soils as it can grow in marginal zones and even those that are unsuitable for other crops. Palms are thus found in highly saline sandy soils, acid sulphate mangrove soils and deep peat soils. Salt has a beneficial effect on the size of coconuts.

The slender stipes and long pinnate leaves mean that these palms can resist strong winds and even hurricanes.

The tree with a hundred uses or the Tree of Life

Coconut palms have many uses both for local populations and in developed countries.

The wood is used in making sculptures, handles for tools, domestic utensils, piles for houses, bridges, boats, flooring and furniture.

The inflorescences are incised to tap sweet sap served as a beverage (called 'toddy' in India). Fermented, this gives palm wine with a low alcohol content but

that can be distilled to make stronger 'arak'. Coconut vinegar is made from palm wine.

Palm leaves are used for roofing. They are plaited to make mats, hats, brooms, baskets, fans and geotextiles. Husk fibres are used to make matting, doormats, brooms, ropes, mattresses, horticultural substrates and even car seats.

White and tender palm hearts (also called 'palmito', 'burglar's thigh', 'chonta', 'palm cabbage' or 'swamp cabbage') are a much-appreciated food. Coconut shells are used as recipients and also have industrial uses such as the manufacture of active carbon for filtering gases and vapours (cigarette filters, filters for certain nuclear radiation, etc.). The coconut palm is also used for fuel as it is or as charcoal, and palm ash is used as a fertiliser.

Young coconuts provide a refreshing, thirst-quenching drink. Coconuts form a plentiful food supply and are usually the main source of vegetable oil for the populations of atolls. The pulp can be eaten raw or processed. It is dried to form copra that is pressed to obtain coconut oil.

Production of coconut oil is nearly 2.1 million tonnes a year and is No. 7 in world vegetable oil sales. First pressure oil is used in food products. However, hot-processed oil is used to make soap, shampoo, cosmetics, detergent, paint and pharmaceuticals. Many names are used for it in the food industry: Végétaline®, copra oil, etc.; it is also used in the manufacture of margarine. In addition to its taste qualities, this oil is also appreciated for its ability to remain solid at high temperatures (24°C) thanks to its saturated fatty acid composition. Coconut is used in the food industry to flavour pastries, biscuits, chocolate, dairy products, ice cream, etc.

Coconut milk and coconut cream are made by pressing a mixture of fresh grated albumen and water. It is a traditional ingredient in several African and Asian dishes and is used increasingly in Northern countries. The roots and milk of young palms and coconut oil are also considered to have medicinal virtues. The palm is also used as an ornamental plant. The gracious crown and slightly inclined trunk make it a symbol of the tropics.



© Denis Luellet

Varieties and mode of multiplication

There are thought to be more than 400 traditional varieties of coconut in the world. Two ancestral lines probably formed the base of this varietal richness. The 'Niu Kafa' type has elongated triangular fruits with a thick husk, floats easily and germinates slowly and is thought to have been disseminated by marine currents. 'Niu Vai' has round fruits and a thicker husk. It does not float as easily, it is early and rich in liquid albumen. It was probably cultivated and then disseminated by navigators. Repeated crosses between the two lines gave the various coconut cultivars seen today.

The varieties can be classified simply in two large groups: 'dwarf' and 'tall'. More than 95% of the palms grown in the world belong to the second group. The main cultivars are 'Malaysia', 'Rennel', 'Vanuatu', 'Jamaica', 'West African' and 'East Africa'. This type of palm can grow to 30 metres, bears large nuts but does not fruit until it is 5 to 7 years old. The dwarf type is rarer and has a more slender trunk, a more rapid succession of inflorescences and fruits earlier (after two years). The most common varieties include 'Malayan Yellow Dwarf', 'Brazilian Green Dwarf', 'Ghana Yellow Dwarf' and 'Equatorial Guinea Green Dwarf'.

Dwarf x Tall crosses (hybrid varieties) can combine or even amplify the agronomic advantages of the two groups. Results of research in Côte d'Ivoire show that 35 of out of 135 hybrids tested produced 65% more than the standard 'West

African' tall variety. Some even yield twice as much, such as 'PB 12'1 (hybrid of 'Malayan Yellow Dwarf' x tall 'West African') which has been widely planted in South-East Asia. It is estimated that hybrid varieties form 15% of all the coconut palms planted in the last ten years. They include the 'KB' and 'KINA' series from Indonesia, the 'PCA 15' series from the Philippines and the 'PB' (such as 'PB 121') from Côte d'Ivoire.

Coconut palms are generally multiplied using seeds. They are grown in nursery seedbeds or in polybags with regular applications of fertiliser. The seedling are planted out after 5 to 7 months.

Pests and diseases

Coconut is targeted by numerous pests and diseases that cause varying degrees of damage. One of the diseases that forms the greatest threat to production is 'lethal yellowing'. Caused by a *phytoplasma* (bacterium), it results in depigmentation of the palms, premature nut drop, the death of the single bud and finally of the palm itself. Kerala wilt in India and cadang-cadang in the Philippines are serious viral diseases. The conditions of cultivation of coconuts are ideal for the development of certain fungal pathogens such as *Phytophthora palmivora*, *Ganoderma boninense*, *Pestalotia palmarum*, etc.

Pests include numerous insects such as beetles (*Oryctes monoceros* in Africa, *Promecotheca* spp., *Brontispa longissima*, *Rhynchophorus* spp. in Asia and the Pacific). Biological control with *Bacillus thuringiensis* can be used to control caterpillars (*Hidari irava*, *Latoia pallida*, etc.) that eat young shoots. Bugs (*Pseudotherapus wayi* in East Africa and *Pseudotherapus devastans* in equatorial Africa) attack flowers and young fruits and can be managed using weaver ants, their worst natural enemy (*Oecophylla longinoda* in Africa and *Oecophylla smaragdina* in Asia and the Pacific). Damage by termites must also be prevented in nurseries and in young plantations. Coconuts are generally picked directly from the palms to prevent production losses caused by rats and thefts in the plantations. In some countries, bamboo canes 25 metres long are used; they have a knife at the end to detach ripe bunches. In Thailand, some farmers use trained monkeys (*Macacus nemestrina*) that become true agricultural workers as they can gather up to a thousand nuts a day!

Pierre Gerbaud, Consultant
pierregerbaud@hotmail.com



© Guy Bréhiner

Packaging



Coconut carved in the shape of a conical coolie hat



Palette of coconuts: 40 sacks of 40 nuts, totalling 1 tonne



Opening a sack of coconuts



Box of 16 nuts



Box of 15 nuts



Box of 8 nuts



Box of 8 nuts

Photos © Pierre Gerbaud

Quality defects

External



Size defects



Uneven shape



Differences in dehusking



Breakage



Moulds on part of the shell



Moulds caused by seepage of coconut water from another nut



Moulds on the entire surface of a nut



Coconut wetted by water from another nut

Internal



Deteriorated pulp



Internal moulds and oxidation

Germination



Germination starting at an eye



Start of germination and juice flow



Germination of an eye and sinking of the latter into the cavity of the nut

Wholesale market prices in Europe

September 2011

					EUROPEAN UNION — EURO				
					Germany	Belgium	France	Holland	UK
AVOCADO	Air	TROPICAL	BRAZIL	Box			14.00	15.85	
			DOMINICAN REP.	Box			12.80		
	Sea	FUERTE HASS	SOUTH AFRICA	Box			11.25		
			KENYA	Box			9.94		
			PERU	Box	13.25	14.00	11.44		
			SOUTH AFRICA	Box	13.25	14.00	10.75	12.50	
	Truck	NA	SOUTH AFRICA	Box					12.80
		PINKERTON	SOUTH AFRICA	Box	11.50				
		RYAN	SOUTH AFRICA	Box			11.00	13.00	
		BACON	SPAIN	Box					10.30
		NA	SOUTH AFRICA	kg	11.50				
BANANA	Air	RED SMALL	ECUADOR	kg				4.88	
			COLOMBIA	kg		6.33	6.50	5.63	
	Sea	RED SMALL	ECUADOR	kg				5.34	
			ECUADOR	kg				2.29	
			ECUADOR	kg			1.77	2.01	
CARAMBOLA	Air		MALAYSIA	kg		4.56	4.86	4.24	4.58
	Sea		MALAYSIA	kg					2.94
			THAILAND	kg					2.57
CHAYOTE	Sea		COSTA RICA	kg			1.15	1.33	
COCONUT	Sea		COSTA RICA	Bag				17.80	
			COTE D'IVOIRE	Bag		11.08	11.75	10.18	18.01
			DOMINICAN REP.	Bag				20.10	
			INDONESIA	Bag				12.15	
			SRI LANKA	Bag					13.14
DATE	Sea	BAHRI MEDJOL	ISRAEL	kg				1.95	
			ISRAEL	kg		7.44	6.50	8.25	5.95
			MEXICO	kg					10.07
	NA		SOUTH AFRICA	kg		8.00			
			ISRAEL	kg			2.05		
			TUNISIA	kg				1.83	1.75
DURIAN	Air		THAILAND	kg				7.00	
EDDOE	Sea		BRAZIL	kg			1.88		
			COSTA RICA	kg				1.47	
GINGER	Sea		BRAZIL	kg	1.21	1.00		1.34	
			CHINA	kg	1.13		1.45	1.15	1.03
GUAVA	Air		BRAZIL	kg				6.00	
			THAILAND	kg				6.75	
KUMQUAT	Air		ARGENTINA	kg				7.50	
			ISRAEL	kg					5.72
			SOUTH AFRICA	kg		4.75		5.75	
LIME	Air		MEXICO	kg			4.40		
	Sea		BRAZIL	kg	2.11		3.05		2.77
			ISRAEL	kg					3.43
			MEXICO	kg	2.44		3.35		3.14
LITCHI	Air		ISRAEL	kg			5.25		
	Sea		ISRAEL	kg	3.31			4.04	3.71
MANGO	Air	KASTURI KENT	ISRAEL	kg		2.50	3.63		
			ISRAEL	kg	2.35		3.85	3.97	
			THAILAND	kg				7.80	
			ISRAEL	kg				3.43	
	Sea	NAM DOK MAI SHELLY ATKINS KEITT	BRAZIL	kg	1.13				1.63
			BRAZIL	kg					2.07
			ISRAEL	kg		1.43			
			MEXICO	kg					2.00

					EUROPEAN UNION — EURO				
					Germany	Belgium	France	Holland	UK
MANGO	Sea	KENT	BRAZIL	kg		1.88			
			ISRAEL	kg		1.81	2.50		
			MEXICO	kg				1.33	
			SENEGAL	kg	1.13	1.75			1.86
	Truck	NA	ISRAEL	kg	3.67				
		PALMER	BRAZIL	kg	1.75				
		OSTEEN	SPAIN	kg	2.38		2.40		
MANGOSTEEN	Air		INDONESIA	kg		7.25		7.17	
			VIET NAM	kg		8.00			
MANIOC	Sea		COSTA RICA	kg			1.40	1.15	
MELON	Sea	CANTALOUPE	BRAZIL	kg				1.90	1.66
		CHARENTAIS	BRAZIL	kg					1.77
		GALIA	BRAZIL	kg				1.79	1.72
		HONEY DEW	BRAZIL	kg				0.95	0.89
		PIEL DE SAPO	BRAZIL	kg					0.84
		WATERMELON	BRAZIL	kg					0.93
PAPAYA	Air	FORMOSA	BRAZIL	kg				3.07	
		NA	BRAZIL	kg			3.60	3.17	3.14
			ECUADOR	kg					3.59
			GHANA	kg					4.00
	Sea		THAILAND	kg				4.69	
			ECUADOR	kg		2.00		2.22	
			MALAYSIA	kg					2.06
PASSION FRUIT	Air	NA PURPLE	COLOMBIA	kg			5.35	5.25	4.00
			ISRAEL	kg			6.25		
			KENYA	kg	5.13			4.38	3.71
			THAILAND	kg				6.75	
		YELLOW	ZIMBABWE	kg				5.00	
			COLOMBIA	kg				7.95	
PERSIMMON	Air		PAKISTAN	kg					2.01
PHYSALIS	Air	PREPACKED	COLOMBIA	kg			7.50	7.53	7.38
	Sea		COLOMBIA	kg	4.68	4.50		5.49	
PINEAPPLE	Air	SMOOTH CAYENNE VICTORIA	GHANA	kg			2.10		
			GHANA	Box		11.50			
			MAURITIUS	Box		12.50		12.35	
			MAURITIUS	kg			3.85		
			REUNION	kg			4.00		
			SOUTH AFRICA	Box				11.82	
	Sea	MD-2	COSTA RICA	Box	7.50	8.33	8.44		8.87
			COSTA RICA	kg			0.90		
			COTE D'IVOIRE	Box					8.57
PITAHAYA	Air	RED	THAILAND	kg				6.50	
			VIET NAM	kg		5.71		6.51	
		YELLOW	ECUADOR	kg				8.00	
PLANTAIN	Sea		COLOMBIA	kg			1.15	1.00	
			COSTA RICA	kg					1.18
			ECUADOR	kg			1.10	1.03	
RAMBUTAN	Air		THAILAND	kg				7.31	
			VIET NAM	kg		7.00		7.25	
SWEET POTATO	Sea		BRAZIL	kg					1.49
			EGYPT	kg			0.90		0.86
			ISRAEL	kg			1.80		1.76
			SOUTH AFRICA	kg			1.40	1.25	1.37
TAMARILLO	Air		COLOMBIA	kg		6.46		6.24	
YAM	Air		BRAZIL	kg			2.10		
	Sea		COTE D'IVOIRE	kg			1.60		
			GHANA	kg			1.55	1.43	1.49

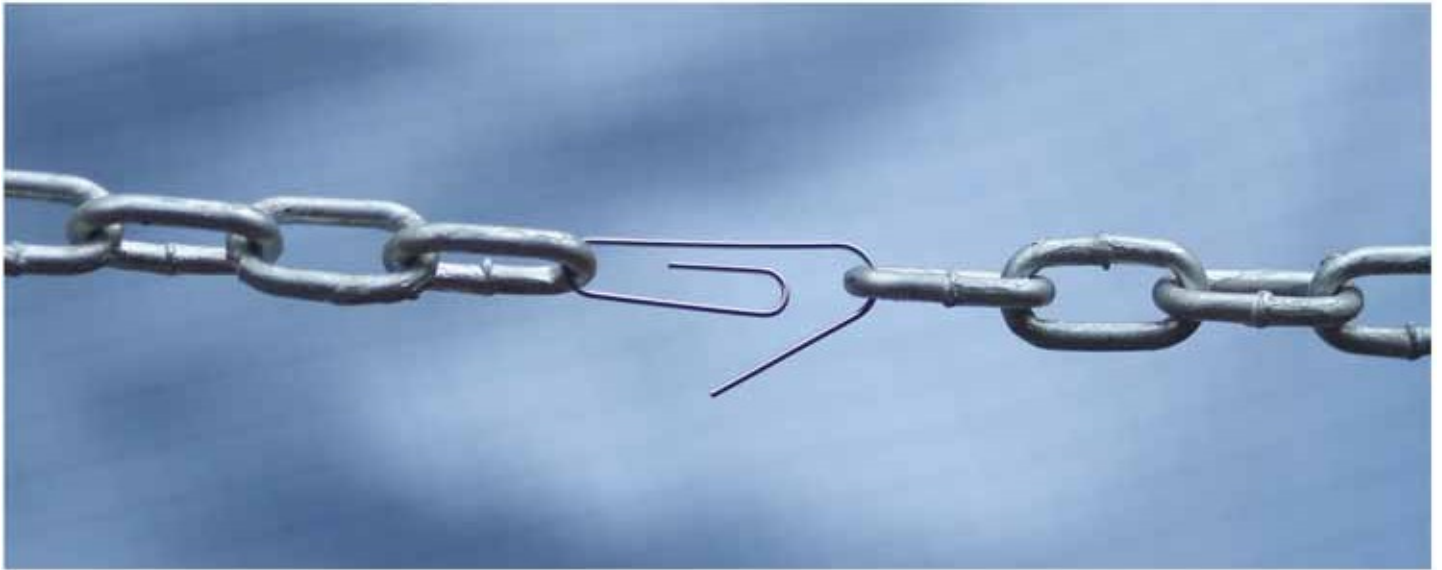
Note: according to grade

These prices are based on monthly information from the Market News Service, International Trade Centre UNCTAD/WTO (ITC), Geneva.

MNS - International Trade Centre, UNCTAD/WTO (ITC), Palais des Nations, 1211 Geneva 10, Switzerland

T. 41 (22) 730 01 11 / F. 41 (22) 730 09 06

Information... your weak link?



Reefer Trends is an independent news and information provider, financed exclusively by revenue from subscriptions.

First published in 2003, it provides a number of services for users along the reefer logistics chain: the Reefer Trends weekly charter market brief is *the* benchmark publication for the specialist reefer business – it tracks the charter market for reefer vessels, as well as fruit and banana production and market trends that influence charter market movement.

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